# TRAINING HANDICAPPED CHILDREN

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To Miss R Patterson

With appreciation
of your co operation in
helping to make this
work possible

Harry Amoss

# TRAINING
# HANDICAPPED CHILDREN

# Training Handicapped Children

BY

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Authorized by the Minister of Education as a Manual for Teachers in the Public and Separate Schools of Ontario

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# INTRODUCTION

THE editors wish to acknowledge indebtedness to: Ethel Teasdall for the chapter on Classes of Minor Educational Responsibility; Jessie Sharpe for the chapter on Classes of Dual Responsibility; Flora Rothmann for the chapter on Sight Saving Classes; Annie Stirk for the chapter on Oral and Lip-reading Classes; Imogen Palen for the chapter on Speech Correction Classes; Katherine Millar, Clara Blacklock and Georgina Barton for contributions on music instruction; W. D. Paton, A. M. Lee, Rhoda Ward and Eunice Freeland for contributions on craft work; Jean Hampson for a contribution on orthopedic work; The many auxiliary class teachers throughout the province who in their devotion to the welfare of handicapped children are to be largely credited with the conception and development of methods outlined in this book; Dr. Helen MacMurchy and Dr. S. B. Sinclair, former Inspectors of Auxiliary Classes, who are largely responsible for the evolution of the present organization.

HARRY AMOSS
L. HELEN DELAPORTE

TORONTO, *January* 1*st*, 1933

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# BOOK ONE

## CHAPTER I

## AUXILIARY EDUCATION IN ONTARIO

TO interpret properly the meaning of a movement it is often helpful to consider its history.

The germinal idea out of which the auxiliary class movement developed may be looked for somewhere in the early half of the nineteenth century, at a time when aristocratic forms of government in Canada were slowly giving place to more democratic institutions. Forces which made for democracy in politics likewise made for democracy in education.

Education organized on a democratic basis implies equality of opportunity—equal opportunity to attend school and also equal opportunity to benefit from attendance. Two problems relevant to this implication arose when Egerton Ryerson undertook to establish a democratic system of education in Ontario:

1. That of bringing the child to the school.
2. That of bringing the school to the child.

The first problem has been, to a large extent, met:

1. In universities, by the institution of extramural courses, and the transference of the junior year to collegiate institutes.
2. In secondary education, by the establishment of continuation schools and the diminution or abolition of attendance fees.
3. In primary education, by the passage of several attendance acts, the utilization of school cars, the introduction of correspondence courses, and, in the case of physically handicapped

children, the institution of auxiliary hospital, sanatorium, orthopedic, and visiting-teacher classes.

The problem of bringing the school to the pupil, that is, of adjusting education to meet the special needs of the learner as an individual and likewise as a future member of society, is being solved:

1. In universities, through the introduction of optional courses and the establishment of professional colleges.
2. In secondary education, through the organization of technical, vocational, commercial, and agricultural schools.
3. In primary and to some extent secondary education, through a profound modification of teaching methods and the institution of auxiliary-training classes and special industrial schools.

Viewed in historic perspective, the auxiliary class movement may, therefore, rightly be regarded as a normal phase in the still larger movement to completely democratize education. It is a recognition of the right of every child to be supplied with that form of training which will best meet his requirements both as a present learner and as a future citizen, and so complements in equity the enforcement of various attendance acts by requiring that the state, which compels all children to attend school, shall in turn make proper provision for the education of all children.

The movement to extend the privileges of education to children handicapped by physical or mental variation was forced to contend with antagonisms and prejudices similar to those which had blocked for a time the founding of free primary schools. Opposition took the form of objection on principle and objection on grounds of practical policy.

In days of brawn, the blind, the deaf, and the crippled were objects of contempt, creatures apart from men. An increasing civilization opened to these hitherto unfortunates avenues of success. Some became eminent in politics, others in literature, art, science, and finance. Such demonstrations of ability to cope with their fellows on terms of equality won for the physically handicapped the right to educational consideration. The question thereafter became one of practical policy. Could the state afford to provide special facilities for these children? The query was answered by the reverse interrogation. Could the state afford not to make such provision? Would not the cost of caring for the unfit more than balance the special cost of rendering them economically and socially fit? The passage of various compulsory attendance acts likewise raised the argument of equity. Could a state, which obligated parents in matters heretofore optional, itself in justice exercise the right to pick and choose?

In the case of mental variants opposition took the form of objection on principle. The pupils in question were pronounced incapable of receiving an education. To the Greeks all strangers were barbarians. To the schoolmaster of a century ago boys and girls who could not master the subjects on the elementary school programme were dunces and blockheads. Placed in an educational environment where they met with repeated and inevitable failure, these pupils left school with a grovelling or defiant attitude of mind, to become public charges or social menaces.

Nor did the first scientific investigation of their status as conducted by several foreign countries, do much to ameliorate their condition. Outside non-educational agencies entered the schools, put suspected children through strange, unusual rites, branded them as subnormals and mental defectives, and segregated them in outcast groups, where their presence would neither annoy the busy teacher nor impede the progress of the regular grades.

Possibly, successes in the modern world of sport, attained by certain members of this scientifically-determined human subspecies, were instrumental in creating a change of attitude. Possibly, the outcome of the earnest efforts of a number of devoted teachers in charge of segregated groups was chiefly instrumental in the establishment of a new view-point. Working with courage, patience, and kindly intelligence, but most of all with faith in the possibilities of their charges, they were able, through the formulation of new courses and methods of training, to reconstruct the shattered personalities of their pupils and establish them in society as self-supporting, self-respecting members; thus convincing a sceptical world that measures of preventive education constitute a far superior method of handling these children than subsequent judicial, institutional, and charitable remedies. While an ultimate solution of the problem presented by children difficult of social adjustment may not yet have been evolved, it has been proven, at least, that salvage is better than wastage.

In Ontario this struggle to effect a complete democratization of education resulted in the following legislation.

The Auxiliary Classes Act of 1914 provides that:

> A board may establish and conduct classes for children who, not being persons whose mental capacity is incapable of development beyond that of a child of normal mentality at eight years of age, are, from any physical or mental cause, unable to take proper advantage of the ordinary public or separate schools courses.

The Vocational Educational Act of 1930 states:

> Subject to the regulations, pupils of thirteen years of age and over, who have been in attendance in auxiliary-training classes, or who are eligible for admission to such classes, may, with the approval of the Minister and upon an examination conducted subject to his direction, be admitted to special industrial classes established by a board for the purpose of giving vocational instruction to such pupils where it is found that they may be benefited by it.

Under subsequent regulations, auxiliary hospital, sanatorium, visiting teacher, orthopedic, sight-saving, lip-reading, and other classes were organized for physically handicapped children; and auxiliary training classes and special industrial schools for pupils whose mental variation makes progress difficult in the regular public and separate school grades.

The establishment of these latter classes constitutes an effort to adjust education to the exceptional needs of elementary school children in the same manner as the diversified branches of secondary and university schools fit instruction to the special needs of more advanced students. If a young man has a special bent in the direction of science, he studies chemistry in the School of Practical Science rather than philosophy in the University, thus meeting the particular requirements of his mental make-up, and fitting himself at the same time to occupy an effective place in society. If a girl displays special aptitude for dressmaking, she takes the sewing course in a vocational school rather than the Latin course in a high school. If a child shows greater inclination for repetitive manual work than for book learning, he is taught business habits and attitudes in an auxiliary training class, and later, perhaps, in a special industrial school, rather than grammar in a public or a separate school.

Public and separate school courses of study are more fundamental and, therefore, more uniform than those of the secondary school or the university. Public and separate school pupils are less developed and, therefore, more homogeneous as a group, than the students in more advanced institutions. Hence diversified ability requiring the need of special training is less frequent and more noticeable in elementary education than elsewhere. Nevertheless, primary school differentiation is one of time and place rather than of kind. Teachers have to deal with a different requirement of mind or body, but not with a different species.

Two essential concepts in the proper interpretation of auxiliary education may thus be derived from a study of its historic background:

1. Classes so organized are an organic outgrowth of the evolving educational system, not an extraneous appendage added to it.
2. Pupils in these classes are merely normal or incidental variants whose earlier diversification demands and receives earlier attention.

A recognition in Ontario of the first-stated principle led to the organization of auxiliary classes as an integral development in the regular educational system, subject to the same general school law, the same general school regulations, and the same general school procedure.

One result of such recognition is that, in contradistinction to the policy pursued in certain other countries, the establishment of auxiliary classes in Canada, and more particularly in Ontario, has been made a matter within the autonomy of the local school board. Their institution and maintenance are controlled after the same fashion as agricultural, commercial, vocational, and other diversified branches in the realm of higher education. Training courses for teachers, inspectoral assistance, free surveys, and special grants are provided by the government as in these other services, but the power to initiate, control, and disestablish remains with the local board. It is felt that a policy which aims at securing the good-will and voluntary co-operation of a community will, in the long run, be productive of more beneficial and more permanent results than measures of compulsion. The rapid expansion of the movement is proof of the wisdom of such a policy.

A second consequence of the inclusion of these classes within the immediate organization of the general educational system is apparent in school administration. Subject to the approval of the inspector of auxiliary classes and the local inspector, they are, in the same manner as other classes, directly under control of the school principal. Conforming to the same general school discipline, and to the same general school procedure in matters of selection, classification, promotion, etc., the classes are not stigmatized in their organization by the advent of outside forces, and are not marked off by essential differences of control. The pupils profit by continuance of contact with other children of their own age. During the formative period of childhood the development of a-social and anti-social sets of mind so characteristic of semi or complete institutionalization is avoided. The child participating in the regular life of the school and home is adjusted to associate and work co-operatively with his fellows—an essential phase of education in our modern complex civilization.

A recognition in Ontario of the second principle, that pupils in auxiliary classes are merely variants whose earlier diversification demands and receives earlier attention, is both the result and the cause of a greatly increased spirit of tolerance with respect to matters educational. There is a growing realization that intelligence as a school concept, is not commensurate with intelligence as an out-of-school concept; that ability to adjust oneself to book learning and examinations is not necessarily correlative with ability to adjust oneself to the world of affairs; in short, that intelligence is not a thing of one, but of several, even many, dimensions, complex even as life is complex, unique in each individual, and capable of being developed to fulfil some particular function in the intricate social organism. The mountain should not scorn the broad lake for its lowliness, nor the lake the long river for its narrowness.

There is likewise a growing realization that mental integration is a more essential factor in life and, therefore, in education, than mental brightness, even as the general make-up of an automobile is of more importance than the speed of its engines. Instability outrivals stupidity as a cause of failure. The building up of a balanced personality is possible at any but the lowest levels of school intelligence, and is becoming more and more recognized as the dominant aim in education.

The results of the movement up to date may be briefly summarized:

1. The establishment within the school and by the school of educational programmes fitted to the special needs of early varying pupils.
2. The gradual disuse of an offensively discriminative, not to say snobbish, terminology, until the use of such terms as subnormal, mental defective, etc., is taboo throughout the schools of the province.
3. A growing consciousness that children of all but the lowest levels of school intelligence can be trained to become self-respecting and self-supporting citizens.
4. A recognition of the just rights of all to receive an education adjusted to their requirements, coupled with a realization that the complex conditions of modern civilization demand that even the humblest labourer shall be trained, not only to carry on his work, but likewise to live happily and amicably amid his fellows.

## CHAPTER II

# GENERAL ORGANIZATION

PUPILS for whom auxiliary classes were devised fall into two main groups:

I. Early physical variants.
II. Early mental variants.

## I

Early physical variants may be classified with regard to attendance possibilities into three sub-groups:

1. Those who on account of physical disability cannot attend school.
2. Those whose attendance is dependent upon the provision of special transportation facilities.
3. Those who can attend, but whose physical variation requires the use of special equipment and special methods of instruction.

The same group may be likewise divided, according to the health status of its members, into two sub-groups:

1. Children whose medically remedial condition may be considered static—discharged patients from hospital, the congenitally deaf, etc.
2. Children whose condition requires the active attention of a physician.

The first-mentioned sub-grouping forms the basis of school and class organization. The second serves to establish relations of co-operation between educational and medical authorities, and to determine in any particular case to what extent responsibility shall be shared between them.

To meet the different needs of the first sub-group there have been established the following several types of classes:

1. For children who are eligible, but unable to attend school on account of a physical condition as certified to by the Director,

Division of Child Hygiene, or the School Medical Officer, and approved by the Inspector of Auxiliary Classes.

(1) *Home Instruction Unit*—In towns, villages, and rural areas a board may engage a qualified teacher to give not less than one hundred hours' instruction in not fewer than fifty visits during the school year.

(2) *Visiting Teacher Classes*—In cities a board may engage a full time or part time qualified teacher to visit the homes and give not less than ninety minutes' instruction in not fewer than two visits per week during the school year.

(3) *Hospital and Sanatorium Classes*—On the request of the superintendent of an institution for sick, tubercular, or incurable children, a school board may establish and conduct classes.

2. For children whose attendance is dependent upon the provision of special transportation facilities on account of a physical condition as certified to by the Director, Division of Child Hygiene, or the School Medical Officer and approved by the Inspector of Auxiliary Classes.

(1) *Orthopedic Classes*—In large cities the board may establish orthopedic classes with a maximum enrolment, when ungraded, of 16, and provide transportation facilities for pupils.

(2) *Partial Orthopedic Classes*—In small cities and towns where not more than twelve nor fewer than four disabled children can be selected, the board may establish partial orthopedic classes, and provide transportation facilities, the auxiliary group to be augmented by sufficient pupils from a single intermediate grade to bring a maximum enrolment of twenty to twenty-four.

(3) *Rural Orthopedic Unit*—In towns, villages, and rural areas where from one to three disabled children can be selected, the board may establish rural orthopedic units, and provide transportation facilities, the auxiliary pupils to be placed in the regular grades of the school.

3. For children who can attend, but whose physical variation, as certified to (except in case of speech correction classes) by the Director, Division of Child Hygiene, or the School Medical

Officer, and approved by the Inspector of Auxiliary Classes, requires special equipment and special methods of instruction.

(1) *Braille Classes*—For blind children, in cities of 200,000 population and over; maximum enrolment of ungraded groups, eight.

(2) *Oral Classes*—For totally deaf children in cities of 200,000 population or over; maximum enrolment of ungraded groups, eight.

(3) *Lip-reading Classes*—For children whose hearing is so poor that even when placed in front seats they cannot hear enough to make satisfactory progress or who may require to learn lip-reading on account of the danger that they may become absolutely deaf; maximum enrolment of ungraded groups, sixteen.

(4) *Sight-saving Classes*—For children whose sight is so poor as to prevent them from making satisfactory progress, even when they are provided with proper glasses and placed in a front seat, or whose sight would be further impaired through the use of ordinary text-books and other means of instruction; maximum enrolment of ungraded groups, sixteen.

(5) *Partial Sight-saving Classes*—In centres where not more than twelve or fewer than four pupils of a sight-saving type can be selected, the auxiliary group to be augmented by sufficient pupils from a single intermediate grade to bring a maximum enrolment of from twenty to twenty-four.

(6) *Rural School Sight-saving Unit*—In centres where from one to three pupils of a sight-saving type can be selected, the auxiliary pupils to be placed in the regular grades of the school.

(7) *Open Air Schools and Classes*—For delicate, anaemic or undernourished children, held in forests, parks or fields, or in classrooms with one side, at least, open to the sun and outer air.

(8) *Speech Classes*—For children who suffer from stammering, stuttering, and other marked speech defects.

## II

The second group, early mental variants, may be divided into three sub-groups:

1. Children whose mental development has through various

causes been arrested to such an extent that they can neither profit by instruction given in public and separate schools nor achieve sufficient self-control to render them responsible for non-supervised conduct. They are defined by the Auxiliary Classes Act as "being persons whose mental capacity is incapable of development beyond that of a child of normal mentality at eight years of age."

It is obvious that a child who at twelve years of age chronologically is but six years of age or less mentally, has but little to gain from attendance at an elementary school. Though he may be taught to recognize and write a limited number of words, he will never be able to employ such achievements profitably in the actual world of life. He can be taught to count, but rarely can he be trusted to calculate the correct change from a purchase involving the expenditure of a quarter. He can, however, be trained to perform simple repetitive manual actions—digging a garden, scrubbing a floor, etc.

The most serious factor in connection with his attendance at a primary school is the fact that he is incapable of developing responsibility for unsupervised conduct. On his way to and from school, at the noon and recess periods, and during enforced absences of the teacher from the room, he is always a danger to himself, a menace to his companions, and a threat to the safety of public and private property. During adolescence and post adolescence, he or she is likely to present serious social problems.

Moreover, since in adult life the same inability to direct conduct will exist, it has been deemed the policy of wisdom in the interests alike of the child, the teacher, and the other pupils of the school, to exclude such persons, in order that they may be institutionalized and placed under the wardship of the state.

The procedure re exclusion is as follows:

Sub-section 1 of section 6 of the Public Schools Act, 1920, is amended, by inserting after the word "supporters" in the fourth line, "and except persons who by reason of mental or physical defect are unable to profit by instruction in the public schools," and by adding thereto the following clause:

> Where a question arises as to whether or not a person can profit by instruction in a public school, the matter shall be referred to a committee appointed by the Minister for that purpose whose decision shall be final.

(*a*) According to the nature of the defect in question, the child is given a Stanford Binet examination by an inspector, an auxiliary class teacher, or other recognized psychometrist, who shall record doubtful answers and his appraisement of all answers on a regulation record form, (or) a medical examination as directed by the Director, Division of Child Hygiene, (or) both examinations.

(*b*) The local inspector obtains from the teacher a written report on the case, giving reasons why the child should be excluded. He makes a similar report himself, definitely recommending exclusion, and forwards both reports, together with the mental examination record, to the Chief Inspector of Public and Separate Schools.

(*c*) The matter then comes officially before a committee consisting of the Chief Inspector, the Director, Division of Child Hygiene, and the Inspector of Auxiliary Classes. If the Minister approves of exclusion, a note will be sent through the local inspector to the parents or guardians giving opportunity of voluntary withdrawal from school.

(*d*) If the parent or guardian does not conform to this request, the child is then excluded officially.

2. Children of the direct learning type. From one to five per cent. of the children in any community, either through heredity or incidental causes, are non-academic minded. They lack the ability to learn mediately and indirectly through contact with representations of experience as expressed in books, symbols, abstractions, and generalizations. They have, however, the capacity to acquire social and vocational adjustments and limited academic achievements by means of training processes which involve more or less direct immediate contact with experience. Their capability on the motor-perceptual-remembrance plane of learning approximates, and in some cases, surpasses that of the ordinary grade pupil. A well integrated personality and an emotionally stable character can be developed

in response to a patient, sympathetic interest in their welfare and the employment of training procedures which are of a perceptual rather than a rational nature.

In the regular grades such pupils lead very unhappy lives. Placed in a situation where they must inevitably and invariably fail, they become subjects of reproach and contempt, alike to themselves, to their fellows, and frequently to their teachers. Leaving school with but little gained beyond a well-developed inferiority complex and an anti-social attitude of mind, they fall easy victims to exploitation, he of the criminal, and she of the evil-minded.

For pupils of this type the following auxiliary classes have been established:

(1) *Mixed Training Classes*, maximum enrolment sixteen, for boys and girls of all school ages.
(2) *Boys' Training Classes*, maximum enrolment, eighteen, for boys of all school ages.
(3) *Girls' Training Classes*, maximum enrolment, eighteen, for girls of all school ages.
(4) *Junior Training Classes*, maximum enrolment, twenty, for children of both sexes below the age of thirteen.
(5) *Girls' Senior Training or Promotion Classes*, for girls of thirteen years of age and upward, maximum enrolment, one room twenty, two rooms twenty-four each, three or more thirty each.
(6) *Boys' Senior Training or Promotion Classes*, for boys of thirteen years of age and upward, maximum enrolment, one room, twenty, two rooms, twenty-four each, three or more, thirty each.
(7) *Special Industrial Schools* for senior girls and for senior boys in centres where they may be administered by an advisory vocational committee.

3. Neurotic and psychotic children. Neurotic children may be described as those whose neural tissues have been so damaged by accident or disease as to render difficult the development of an emotionally stabilized character. Psychotic children are those whose neural tissues are intact, but whose mental functions have become distorted, disintegrated, or otherwise maladjusted

through continued unsatisfactory responses, or, in some cases, non-responses to environmental situations. Pupils of this type may be moody, sulky, cantankerous, quarrelsome, fearsome, truants, sex perverts, or problem children of other descriptions. The sympathetic and understanding teacher can do much in the way of mental readjustment and reconstruction. However, neurotic and some psychotic cases are, in a strict sense, subjects for medically remedial procedure and should wherever possible be referred to the attention of the school medical officer.

Children of this type, possessing normal or superior intelligence, should not be placed in auxiliary training or promotion classes, since they easily establish an undesirable leadership. Where the intelligence is somewhat below normal, even though above the ordinarily accepted standard for auxiliary training class pupils, they may be placed in such groups for readjustment to ordinary grade work. Auxiliary institutional classes may be organized in institutions established for the care of wayward and otherwise unprotected children.

A second classification of early mental variants is concerned with the several causes of deviation (1) heredity, (2) glandular deficiency, (3) birth injury, (4) disease. It is of value to the auxiliary class teacher in helping her to study and to understand the needs of pupils under her charge:

1. An examination of some ten thousand records of auxiliary training class candidates shows that from 70 to 80 per cent. of entrants are born of parents one or both of whom exhibit mental characteristics similar to those of their offspring. Owing to the dearth of scientific evidence and the limited application of scientific methods in dealing with phenomena of heredity, it is an assumption to infer that the cause of mental deviation in such cases is due entirely to the influence of generation. However, since heredity seems to be the constant factor involved, such assumption at present appears to be the only feasible explanation.

Where the factor of heredity is not complicated by other causes pupils of this type are frequently capable of developing a well-integrated personality. Their inability to generalize or to carry on higher imaginative processes renders them incapable of succeeding in executive positions or vocations which require carefully planned activities. On the other hand, they are generally physically active and, within their limitations, mentally alert, and may readily be adjusted to the simpler social and vocational activities of citizenship.

2. Children suffering from glandular deficiency may be the offspring of parents who possess normal or even superior mentality, but who are approaching the age limit of reproductivity. They may also be the progeny of mothers who have suffered from severe illness or shock during pregnancy. The exact nature of the deficiency is sometimes difficult to determine.

Glandular defectives are frequently characterized by an abrupt termination of mental development at a point which usually precludes their entrance into auxiliary training classes, and renders them candidates for exclusion procedures. Marked facial or other physical variations (see mongolianism, cretinism, etc.) usually accompany this arrest of mental development, and certain lethal factors detrimental to longevity may be introduced. Children of this type generally possess a stolid cheerfulness, which renders the few who are capable of pursuing a school course easily amenable to class discipline.

3. During instrumental or extreme cases of natural delivery pressure may cause an overlapping of the parietal sutures to such an extent that serious cerebral hemorrhage takes place, followed by formation of lesions in the cortical tissue, and consequent mental impairment.

4. Certain diseases—epilepsy, encephalitis, syphilis (congenital or acquired), meningitis, etc., are likewise destructive of cerebral and other nerve tissue.

The mental development of children in sub-groups (3) and (4) is usually quite irregular, and may be compared with the growth of a tree which has been struck by lightning. Certain functions may survive with but slight impairment, while others are more or less completely destroyed. Emotional instability sometimes makes difficult the control of such children in the classroom and their placement in society.

In early childhood epileptics may possess normal or even superior intelligence, but usually deteriorate during adolescence. If subject to seizure during school hours, they are not eligible for admittance to auxiliary classes. Since this disease may be checked or alleviated by early medical treatment, all children suffering from epilepsy should be referred to the local school medical officer.

## III

General legislation and regulations governing the establishment and organization of auxiliary classes are as follows:

> A board may establish and conduct classes for children who, not being persons whose mental capacity is incapable of development beyond that of a child of normal mentality at eight years of age, are, from any physical or mental cause, unable to take proper advantage of the ordinary public or separate school courses. 1914, c, 49, s.3.
>
> Subject to the regulations pupils shall be admitted to auxiliary classes upon the report of a board consisting of the principal of the school, the school medical inspector, and another school inspector, or the chief or senior school inspector as the case may be, of which board the principal shall be the chairman approved by the inspector of auxiliary classes. 1927, c. 324, s.6.
>
> In response to a request from a school board or school boards of a school area the inspector of auxiliary classes shall, with the approval of the Minister, conduct a free survey of the school area with the assistance of the local inspector and the staff of the school or schools concerned. Reg. II (1).
>
> No general survey that might in any way mark or stigmatize auxiliary and normal grade pupils shall, without the approval of the Minister, precede the establishment of an auxiliary class. Reg. II (2).
>
> No child shall be admitted to an auxiliary class without an official examination conducted with the approval of the Minister. Reg. III (1).
>
> Unless otherwise directed by the Minister on the report of the inspector of auxiliary classes, or unless otherwise provided in the Auxiliary Classes Act or in the following regulations, auxiliary classes and schools shall be subject to the Regulations of the Public and Separate Schools of Ontario, but in regard to the organization of the course of studies the syllabus may be modified as provided for. Reg. IV.
>
> Suitable and adequate equipment shall be provided for each auxiliary class according to the special needs of the pupils and as directed by the Minister from time to time on the report of the inspector of auxiliary classes. Reg. V. (2).
>
> Every teacher of an auxiliary class, except the teacher of a rural school class, shall have taught not less than three years in an Ontario public or separate school and, in addition, shall hold a second-class certificate or the equivalent, and an auxiliary class teachers' certificate. Reg. VII.
>
> The legislative grant for auxiliary classes will be apportioned annually for the preceding school year, on the report of the inspector of auxiliary classes, to each school board or other educational authority responsible for the maintenance of the class, that complies with the regulations. Reg. X.

# BOOK TWO

## *EARLY MENTAL VARIANTS*

### CHAPTER I

### THE ESTABLISHMENT OF CLASSES

AS pointed out in Chapter I, Book I, the establishment of auxiliary classes in Ontario is a matter wholly within the autonomy of local school boards. Upon invitation, an official of the auxiliary classes branch will gladly confer with a board as to the purpose of auxiliary classes and matters pertaining to their establishment and maintenance, but the initial step in the actual institution of a class must be taken by the local authorities.

Upon receipt of an official communication from a board, requesting a free survey of an area for the purpose of instituting an auxiliary form of education, a *preliminary* survey, or screening of pupils is undertaken by an official of the auxiliary classes branch. The teachers and school nurses of the area in question are called together, supplied with Forms A.C. 3 and A.C. 4, and instructed as to their use. These instructions have been summarized in Circular A.C. 7 as follows:

> Candidates are selected for Auxiliary Training Classes on a consideration of their—(1) Retardation, (2) Repetition of Grades, (3) Profile of Achievement, (4) School History, (5) Health History, (6) Mental Examination.
>
> RETARDATION—Retardation is the excess age of a pupil stated in years and months beyond the mean age of his Form for the month concerned. The names of all pupils beyond Senior Second Class who are retarded 2 years, and of all pupils below Junior Third Class who are retarded 18 months, should be considered in a preliminary survey.

The mean age-grade table, stated in years and months, throughout Ontario for the year 1929 was approximately as follows:

| | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| K. | 5.2 | 5.3 | 5.4 | 5.5 | 5.5 | 5.6 | 5.7 | 5.7 | 5.8 | 5.9 |
| K.P. | 5.8 | 5.9 | 5.10 | 5.11 | 6.0 | 6.1 | 6.2 | 6.3 | 6.4 | 6.5 |
| I. Jr. | 6.8 | 6.9 | 6.10 | 6.11 | 7.0 | 7.1 | 7.2 | 7.3 | 7.4 | 7.5 |
| I. Sr. | 7.11 | 8.0 | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.6 | 8.7 | 8.8 |
| II. Jr. | 9.0 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 | 9.6 | 9.7 | 9.8 | 9.9 |
| II. Sr. | 9.7 | 9.8 | 9.9 | 9.10 | 9.11 | 10.0 | 10.1 | 10.2 | 10.3 | 10.4 |
| III. Jr. | 10.7 | 10.8 | 10.9 | 10.10 | 10.11 | 11.0 | 11.1 | 11.2 | 11.3 | 11.4 |
| III. Sr. | 11.8 | 11.9 | 11.10 | 11.11 | 12.0 | 12.1 | 12.2 | 12.3 | 12.4 | 12.5 |
| IV. Jr. | 12.6 | 12.7 | 12.8 | 12.9 | 12.10 | 12.11 | 13.0 | 13.1 | 13.2 | 13.3 |
| IV. Sr. | 13.4 | 13.5 | 13.6 | 13.7 | 13.8 | 13.9 | 13.10 | 13.11 | 14.0 | 14.1 |

REPETITION—All grades repeated should be specified, as a repetition of grades indicates that in the judgment of more than one teacher the pupil's school progress has been unsatisfactory.

PROFILE OF ACHIEVEMENT—The profile of achievement is ascertained by underscoring the grade of work which the pupil is actually capable of doing, irrespective of the Form in which for various reasons he may have been placed. A highly irregular profile foretells future failure in grade promotion, and designates the pupil as one needing special assistance.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reading | Kn. | Jr. I | Sr. I | *Jr. II* | Sr. II | Jr. III | Sr. III | Jr. IV |
| Writing | Kn. | Jr. I | Sr. I | Jr. II | Sr. II | *Jr. III* | Sr. III | Jr. IV |
| Arithmetic | Kn. | Jr. I | Sr. I | Jr. II | Sr. II | Jr. III | *Sr. III* | Jr. IV |
| Spelling | Kn. | Jr. I | *Sr. I* | Jr. II | Sr. II | Jr. III | Sr. III | Jr. IV |
| Drawing | Kn. | Jr. I | Sr. I | Jr. II | *Sr. II* | Jr. III | Sr. III | Jr. IV |

SCHOOL HISTORY—The school history résumé as filled in by the teacher, tells to what extent retardation may be due to attendance irregularities. It likewise maps out a picture of the pupil's emotional stability and mental integration.

HEALTH HISTORY—The health history résumé as filled in by the school nurse, conveys valuable information as to the special educational and health needs of the child, and may in part account for retardation in terms of physical disabilities.

MENTAL EXAMINATION—The mental examination is administered by either a qualified auxiliary class teacher, a school inspector or an officer of the Auxiliary Classes Branch of the Department of Education. A fairly accurate estimate may be made by the teacher as follows:

Observe the child for a week in comparison with other children. Note if he plays with children younger, of the same age, or older than himself. Children, if given a free choice, usually choose playmates of their own mental level. Compare his classroom work with that of the pupils of the mean age group. If it is about the same, he is then about the same mental age as that group; if it is not as good, he is probably mentally younger than they. If, on the other hand, it is a little better, he is of a higher mental age than they are.

To obtain the Intelligence Quotient (I.Q.) place the estimated Mental Age in months over the Chronological Age in months and reduce the fraction to per cent. Thus, if a child is 10 years and 9 months of age chronologically and 7 years 2 months mentally, the fraction would be 86/129, 66⅔%, and the I.Q. would be 67.

The co-operation of teacher and school nurse is absolutely essential to the successful conduction of a survey.

(1) Please fill in or underline ALL details of the questionnaire as accurately and fully as possible.

(2) Please give any additional information concerning the child in the blank space.

(3) Please remember that without the date of birth an estimation of a child's intelligence quotient is impossible.

(4) Please do not give children any questions from the Stanford Binet Scale.

(5) Please treat all information as strictly confidential. Do not discuss the survey nor the possible formation of a training class with either the pupils or the public.

(6) Please do not impede the success of a training class by the use of disparaging references. These classes are being organized to help the grade-teacher as well as the direct learning pupil.

After a study of from one to three weeks the teachers and school nurses report in duplicate, as per instructions on the front pages of Forms A.C. 3 and A.C. 4, all cases suffering retardation to the extent specified. The official from the auxiliary classes branch or the local school inspector who may have the survey in charge goes over these reports, and eliminates certain cases obviously in need of other attention than that given by placement in an auxiliary training class, for example, foreign-speaking children recently entered school, children from outlying districts where school attendance was impossible. The remaining pupils are then subjected to an official Stanford Binet mental examination by an authorized examiner. A record of reponses in the case of all candidates is made on pages 2, 3, and 4 of Form A.C. 3. The officer's finding and recommendation are entered on page 1 of both Form A.C. 3 and Form A.C. 4.

A general report on the results of the survey is then submitted to the Minister, who may furnish the school board in question with a copy of the same. The local school inspector is furnished with copies of a detailed report on each candidate for the private and confidential information of himself, the principal of the school, and the members of the auxiliary classes board, but no other person or persons. The Director, Division of Child Hygiene, may, on request, subject all candidates to a physical examination and, through the Inspector of Auxiliary Classes, furnish the auxiliary classes board with a report on the results of the same.

Through the Inspector of Auxiliary Classes the Director of Hospital Services for Ontario is furnished with a report on: (1) neurotic-psychotic cases discovered by means of the survey as requiring the attention of a mental hygiene clinic, (2) candidates for exclusion procedure as subjects for wardship and institutional care.

Should the board, upon receipt of the report containing the general results of the survey, decide to institute an auxiliary form of education, pupils for the class or classes to be established are selected by an auxiliary classes board, consisting of the principal of the school to which the candidate is attached or to which the candidate is to be transferred, the school medical officer, and the local school inspector, upon a consideration of the: (1) retardation, (2) repetition of grades, (3) profile of achievement, (4) school history, (5) medical history, (6) mental examination finding, of the several candidates, as reported by the grade teacher, the school nurse, and the mental examiner upon the prescribed forms A.C. 3 and A.C. 4.

The following suggestions are offered for the general guidance of the auxiliary classes board.

1. Where there is an excess of eligible candidates over the maximum enrolment allowed:

(1) Preference should be given those who stand in greatest need of attention.

(2) Matters of local concern, such as distance from school, transference from one school to another, etc., should be taken into account.

2. Owing to the fact that methods of instruction in Primary

classes are of a direct immediate nature, it is usually desirable, especially in smaller centres, that the child remain in the grades until he is at least eight years of age, in order that: (1) he may have been given a fair trial at regular school work, (2) he may have an opportunity to form contact with the broad social life of the school, (3) parents may be convinced through factual experience of the need of a special type of education for their child.

3. Pupils of the auxiliary training or promotion class type usually have an I.Q. ranging between 50 and 75.

4. In borderline cases, where the I.Q. lies between 70 and 80, the child's school progress as reported by the grade teacher should be the determining factor in the matter of admission.

5. Candidates having an I.Q. between 75 and 85, but whose reported (1) retardation, (2) repetition of grades, (3) irregularity of achievement profile, (4) inability to control behaviour, is of such a nature as to show need of special assistance, may be placed in auxiliary training classes with a view to readjusting them to regular grade work, or, if over thirteen years of age, in auxiliary promotion classes or special industrial schools, with a view to training them for citizenship.

6. Owing to the likelihood of undesirable leaderships being established candidates having an I.Q. of over 85 should be admitted only after most careful consideration has been given the case, and the auxiliary class teacher in charge of the room has been consulted.

7. Candidates reported by the nurse as suffering from focal infections and other disease should first receive medical treatment, in the hope that a mental and academic readjustment may be effected without the necessity of placement in auxiliary classes.

8. Mental variation shall be the dominant coefficient in determining the placement of candidates in auxiliary classes. If a candidate who is a mental variant suffers from defective vision, loss of hearing, or a crippled condition, he shall be placed in a class for mental variants rather than in a class for physical variants.

A photostat of an examination form properly filled in by grade teacher, nurse, and mental examiner is shown on page 23.

Where an auxiliary class has been established in any centre, the matter of examining and selecting candidates for its continuance is a responsibility of the local authorities. Proceedings are essentially the same as in the case of the original survey. The local inspector, principal of the school, auxiliary class supervisor, auxiliary class teacher when so authorized, or other approved and recognized official will arrange that grade teachers of the area report on prescribed Forms A.C. 3 and A.C. 4 all cases of retardation within the specified extent. The mental examination is administered by an approved examiner, and the selection of eligible candidates to fill vacancies or to establish subsequent classes is made by the auxiliary classes board. In centres where there is a local inspector, supervisor, or other school official directly in charge of auxiliary class work, Form A.C. 3 may be retained on the local file, while Form A.C. 4 is furnished the auxiliary class teacher at the time of the pupil's admission to the class. In other centres, Form A.C. 3 is forwarded the inspector of auxiliary classes for a confirmatory report on the eligibility of the candidate, and remains on file at his office. Form A.C. 4 is retained by or furnished the auxiliary class teacher.

To meet the special needs of different communities, several types of auxiliary classes for direct learning pupils are recognized.

The standard unit is the mixed auxiliary training class for boys and girls of all school ages. The maximum enrolment is 16. This type is suggested as most suitable: (1) in communities of from 3,000 to 6,000 population, (2) in larger centres where a single initial class is being established, (3) in small cities whose several divisions are each served by a single class, owing to the fact that geographic conditions do not readily permit of a more centralized organization.

As the work in larger areas develops, a more specialized organization becomes desirable. The general guiding principle of differentiation may be stated thus: From the standpoints of equipment, vocational training, control, and the avoidance of

## ONTARIO DEPARTMENT OF EDUCATION
## AUXILIARY CLASS EXAMINATION RECORD

(Please fill in all blanks and underline characteristic words)

### GRADE TEACHER'S CONFIDENTIAL REPORT

City or Town *Delco* School *Central* Room No. 8
Pupil's Name *John Smith* Age on first entering a school *6 years*
Address *124 Jones Avenue* Present Grade *Senior First*
Nationality *English* Grades repeated *K. P. and Jr. First*
Mean Grade Age *8 years 2 months* Retardation *2* yrs *10* mos.
Chronological (actual) age *11* yrs. *0* mos. Date of birth *6* Day *Dec.* Mth *1921* Year
Mental Age (teacher's estimate) *7* yrs. *10* mos. I.Q. (teacher's estimate) *72*
School Opportunities—[✓ Good] or poor, due to change of school—home conditions.
Attendance—regular or [✓ irregular], due to [✓ truancy]—sickness—distance from school.
Tendencies—stable, [✓ unstable]. [✓ Restless], quiet. [✓ Good-natured], ill-tempered. [✓ Social], isolated.
Plays with juniors, [✓ age group], hangs about adults.

| | | | |
|---|---|---|---|
| Cleanliness: | good, average, [✓ poor]. | Posture: | [✓ erect], stooped, slovenly. |
| Tidiness: | good, average, [✓ poor]. | Speech: | normal, [✓ defective], foreign. |
| Politeness: | good, [✓ average], poor. | Alertness: | [✓ quick], slow, dull. |
| Obedience: | good, [✓ average], poor. | Dexterity: | [✓ handy], fair, awkward. |
| Industry: | good, [✓ average], poor. | Reading: | [✓ Kn.], Jr. I, Sr. I, Jr. II, Sr. II, Jr. III, Sr. II, Jr. Iv. |
| Self-control: | good, average, [✓ poor]. | Writing: | Kn., Jr. I, [✓ Sr. I], Jr. II, Sr. II, Jr. III, Sr. III, Jr. Iv. |
| Kindness: | good, [✓ average], poor. | Arithmetic: | Kn., [✓ Jr. I, Sr. I], Jr. II, Sr. II, Jr. III, Sr. III, Jr. Iv. |
| Truthfulness: | good, [✓ average], poor. | Spelling: | [✓ Kn.], Jr. I, Sr. I, Jr. II, Sr. II, Jr. III, Sr. III, Jr. Iv. |
| Honesty: | good, [✓ average], poor. | Drawing: | Kn., Jr. I, [✓ Sr. I], Jr. II, Sr. II, Jr. III, Sr. III, Jr. Iv. |

REMARKS: *A good-hearted boy, willing, but dislikes school and has got into bad company. Mother interested. Father indifferent.*
Date *Dec. 3, 1932* (Grade Teacher) *Mary Hastings*

### NURSE'S CONFIDENTIAL REPORT

Birth—[✓ Normal], abnormal.
Home Conditions—Uplifting, [✓ depressing]. Comfort, [✓ poverty]. [✓ Care], neglect.
Brothers and Sisters—older *3* younger *2* school progress *slow*

| | | | | | |
|---|---|---|---|---|---|
| Family | Health: | father | *fair* | mother | *sickly* |
| | Mentality: | father | *very ordinary* | mother | *ordinary* |
| | Occupation: | father | *labourer* | mother | *does washing* |
| | Remarks: | father | *shiftless* | mother | *tries to get along* |

Child
Walked at *two* talked at *three*
Past health *measles and whooping cough*
Present health *frequent colds, tonsilitis*
Nutrition *three pounds underweight*
Physical defects *teeth need attention*
Personal habits *untidy, suspected of smoking cigarettes*
Vision *10/10 8/10* Hearing *O.K.* Speech
Nurse *Helen Young*

### EXAMINER'S CONFIDENTIAL REPORT

Examinee—Nervous, [✓ composed]. Repressed, [✓ free]. [✓ Language handicap]. (*not serious*)
Examination—Disturbed, uncompleted, abbreviated, [✓ satisfactory], unsatisfactory.
C.A. *11* yrs. *2* mos. M.A. *8* yrs. *1* mos. I.Q. *73*
Recommendation *Auxiliary Training Class.*
Date *Feb. 4, 1933* Examiner *S. S. Kirkland*

### OTHER EXAMINATION (if any)

C.A.....................yrs.....................mos. M.A.....................yrs.....................mos. I.Q..........................
Date................................................................ Examiner..........................................................

social problems among adolescents, it is advantageous first to partially or completely separate the sexes, which vertical division may subsequently be supplemented by a horizontal division of adolescents and pre-adolescents.

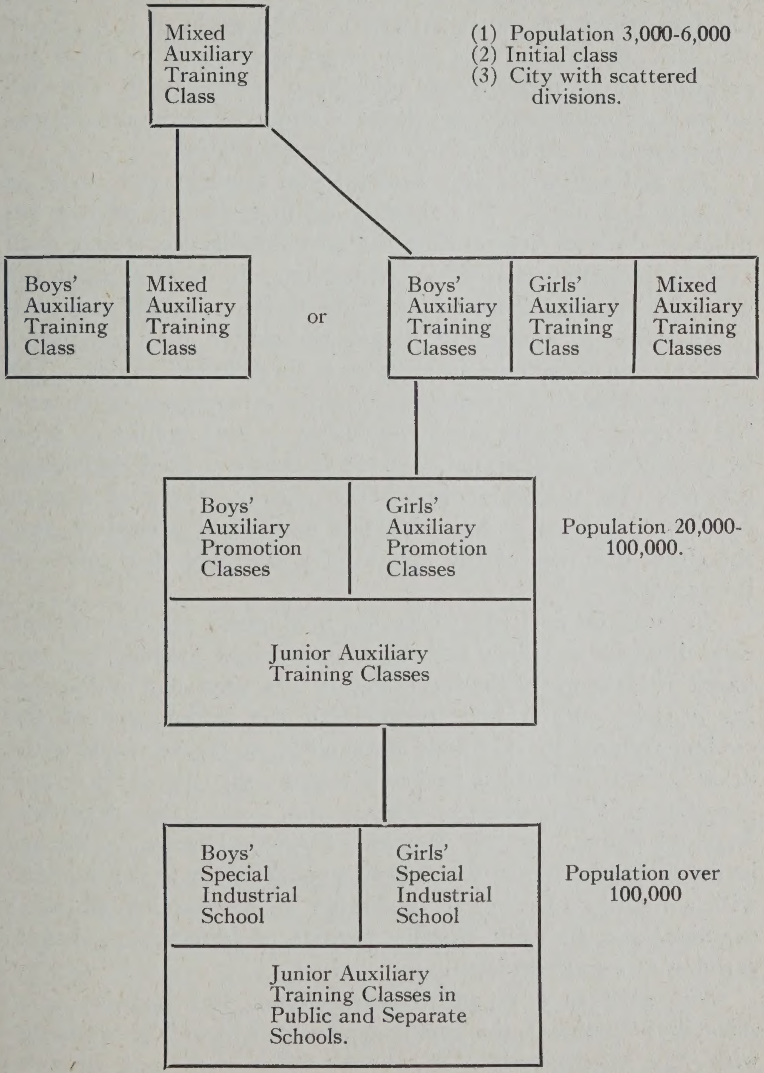
The first, or vertical division, may be accomplished by the establishment of boys' auxiliary training classes and girls' auxiliary training classes for boys and girls, respectively, of all school ages. Because this differentiation diminishes the complexity of the vocational programme the maximum enrolment of each class is increased from 16 to 18. Practical experience has shown that, as a rule, more boys than girls stand in need of this special form of education. Hence boys' auxiliary training classes are usually the first to evolve.

Where population and geographic conditions permit of a more highly specialized and centralized organization, a horizontal division of adolescents and pre-adolescents may be accomplished by the establishment of boys' auxiliary promotion classes and girls' auxiliary promotion classes, for boys and girls of thirteen years of age, together with junior auxiliary training classes for junior children of both sexes. Owing to the fact that the range of academic and vocational activities in classes of this type is considerably narrowed, the maximum enrolment is increased from 18 to 20 in the case of single classes, from 22 to 24 in case of double classes, and from 24 to 30 in case of triple classes. In cities having a population of 100,000 and upward, it is advisable that special industrial schools for senior boys and for senior girls be established. See chart, page 25.

## MENTAL EXAMINATIONS

Auxiliary education in Ontario has been organized to meet the exceptional needs of children rather than the needs of the exceptional child. Exceptional childhood is acknowledged only in the sense that every pupil is an individual. Children from auxiliary classes and children from the regular grades enter the world alike, to mingle indiscriminately in its activities and affairs. Men of lofty intellect have been the world's worst failures; men of lowly intelligence have risen to places of respect and esteem.

The evolution of auxiliary class work may be graphically represented thus:


Mixed Auxiliary Training Class
(1) Population 3,000-6,000
(2) Initial class
(3) City with scattered divisions.
Boys' Auxiliary Training Class
Mixed Auxiliary Training Class
or
Boys' Auxiliary Training Classes
Girls' Auxiliary Training Class
Mixed Auxiliary Training Classes
Boys' Auxiliary Promotion Classes
Girls' Auxiliary Promotion Classes
Population 20,000-100,000.
Junior Auxiliary Training Classes
Boys' Special Industrial School
Girls' Special Industrial School
Population over 100,000
Junior Auxiliary Training Classes in Public and Separate Schools.

It is the business of the school to prepare the youth of a land for the functions of citizenship, and it would seem both futile and mischievous to attempt a distinctive classification of school children which has no counterpart in the world of real affairs. For this reason care has been taken in Ontario to avoid the creation of a pedagogical priesthood vested with supreme authority to close and open doors of educational opportunity as determined by occult rites of intelligence testing.

An elaboration of this fundamental concept was made in Chapter I, Book I. The thesis is again re-stated, since it has much to do with determining the part intelligence testing shall play in the policy of auxiliary education. In deciding upon the eligibility of candidates for auxiliary training classes, the basis of selection is essentially diagnostic rather than dogmatic. Each case is considered from at least six different angles. The evidence educed by a mental examination is extremely important, but in no sense of the word conclusive. Other testimony must be considered in conjunction with it before a final decision is reached. Its particular importance lies in the fact that it consists of a more or less objective method of procedure and, therefore, partakes of the nature of a scientific instrument of investigation.

In fact, the part played by the intelligence test in selecting candidates for auxiliary training classes might fittingly be compared with the use of the thermometer by a physician in diagnosing a case. While fully recognizing the importance of the evidence offered by that little instrument, no doctor would withdraw it from beneath a patient's tongue, scan its surface, and pronounce, "105 degrees—Pneumonia," or "104 degrees—Typhoid Fever," or "97 degrees—Bright's Disease." Rather he considers the fact of the patient's temperature in conjunction with a number of other facts elicited by questioning, physical examinations, or even lengthy periods of observation, before arriving at a final decision.

Not only as a diagnostic instrument, but likewise as a scientific instrument, the intelligence test might well be compared with the thermometer. A thermometer does not directly measure temperature in the same way that a foot rule measures distance. Rather it measures the rise and fall of a liquid in a tube so finely graduated that the movement of the fluid may be accurately determined. Its value as a scientific instrument lies in the close correlation which exists within a limited range of the molar movement of the fluid column and certain molecular movements known as heat phenomena in mediately or immediately contactual bodies. A similar correlation exists between the molar movement of the fluid column in a barometer and certain increasing or decreasing stresses known as atmospheric pressure.

Neither does an intelligence test directly measure intelligence—whatever that concept may imply. Rather it lines up candidates according to responses made to certain specified problem situations. The line-up has been sufficiently well graduated, and the problems and responses sufficiently well standardized, through recorded application to many thousands of cases to permit the determination of a candidate's relative position with a fair amount of accuracy and reliability. The test is an objective instrument because the problem situations are fixed, the value of responses fairly fixed, and the general line-up is capable of being demonstrated experimentally. Nevertheless the line-up is no more in itself than the molar movement of the fluid column in the thermometer or barometer. It is only a line-up such as might be obtained by arranging pupils according to height, weight, length of noses, etc. Its value as a measuring instrument lies in the more or less close correspondence it may bear with other phenomena.

It is not within the scope of this Chapter to discuss the concept, general intelligence. The outstanding fact relative to the question under consideration is that results obtained by certain tests (and more particularly the authorized test used in connection with the selection of auxiliary class candidates and known as the *Terman Revision of the Binet Simon Tests*), bear a fairly high correlation with successful progress through public, high, and university schools. That is, the place which a candidate is given in the general line-up indicates, with a fairly high degree of probability, the extent and success of his progress through school. For this reason the tests may be used in diagnosing brilliancy as well as backwardness.

Many forms of intelligence tests are on the market. The line-up obtained by one form does not necessarily correspond with the line-up obtained by another. Neither does the same degree of correlation exist between school progress and the results obtained from all forms of tests. The auxiliary class teacher and the auxiliary class board should, therefore, be extremely cautious in accepting as authentic results obtained otherwise than by the officially recognized examination as outlined in Form A.C. 3, and as administered by duly accredited examiners.

Intelligence tests may be of the group or the individual variety. The authorized test is of the individual type. The examiner and the candidate are alone in a quiet room free from interruptions and disturbances. The examiner has an opportunity to gain the confidence of the child, and if necessary, to note physical or emotional conditions which might affect the results of the examination. He can also make sure that each problem situation presented by the test is properly understood by the candidate, or that it is quite beyond his comprehension. The problems themselves are tests of power, rather than of speed, since, save in a few instances, no time limit is placed upon their solution.

Group tests are administered to an entire class. Very considerable time is saved by this method of procedure. An approximate picture of a whole school situation can be readily gained. But the results obtained, taken by themselves and without further support are by no means sufficiently reliable for the purpose of determining the placement of pupils. In this connection the following points should be considered:

1. Even with preparatory exercises incorporated in the more recent forms of the group test, the examiner can never be certain that all candidates in a room have properly followed instructions and adequately comprehended various problem situations. This is the more serious since, in the usual group test, a dozen or more questions are based upon the same situation.

2. Except in extreme cases, emotional disturbances on the part of candidates are likely to pass unnoticed. The examiner has no opportunity to make either adjustments or allowances.

3. The usual group examination is a speed test rather than a power test. Definite time limits are set to the performance of each set of questions. Cautious, deliberative, and slow-thinking pupils are heavily handicapped. The quick, active, snappy child is given decided preferment.

4. Little annoying disturbances inevitable in a room full of pupils are bound to exert a distracting influence on certain candidates.

For these and other reasons the placement of pupils on *unsupported* evidence educed by group tests is little short of educational malpractice.

However, in institutions where the previous school history of candidates is difficult or impossible to obtain, the group test may be used in effecting a preliminary survey.

In the distribution tables given by reputable authorities, there is a consensus of opinion that between two per cent. and three per cent. of school children taken over a large area range between fifty and seventy-five in the scale of intelligence quotients. These children constitute the usual candidates for auxiliary classes. In the actual selection of pupils, however, the proportions vary widely in different school areas from this theoretical ratio. In residential sections of urban centres, the proportion of eligibles may sometimes drop below one-half per cent., while in poorer and more congested areas, it may mount to ten per cent. In smaller communities the proportion varies considerably, depending on the variety and the nature of occupational opportunities. Those conducting an examination should be guided by actual circumstances discovered in the field, rather than by theoretical ratios applicable to large aggregates.

In addition to the outlines given in *The Measurement of Intelligence*, by Terman, the following special points in the administration of tests are to be noted:

A room free from noise and interruptions is necessary for the administration of a mental examination. In many schools it is difficult to obtain a room of this type. The teacher should select the best available, and if necessary place a notice on the door—"Please do not enter."

Interruptions will occur, in which case the examiner should carry on with little concern, keeping a close watch on the child's attitude. If the child succeeds in his test, the interruption may be ignored, but if the child is unduly distracted, or fails, the test should be stopped and an alternative test substituted later. Note should be made on the record of any disturbance.

The presence of others unless absolutely necessary should not be allowed, as an audience is disturbing to both examiner and examinee. There are exceptions to this rule. If the principal or other superior officer is unfamiliar with the tests, he should be permitted to be present, in order to gain an understanding of procedure. It is better to have him present for a few minutes during several examinations than during the entire period of one.

If the necessity arises for the presence of a third party, the person should enter quietly after the examination is under way, and sit back of the child where his presence will be unobserved. Should the child become aware of an audience and show an unfavourable reaction, the visitor should withdraw at a signal arranged with the examiner.

Arrangements should be made to have children sent one at a time to the examiner. Candidates should not be kept waiting at the door of the examination room. Nervous children become quite upset by the uncertainty of the coming ordeal. To prevent coaching, conversation between outgoing examinees and those entering should be avoided. For similar reasons, it is wise, when surveying a school, to choose primary children rather than senior children for the first examinations.

The teacher should have confidence in herself. She should have all the material ready before starting the test. She should make a note of any fact or condition which might have a bearing on the success or failure of the examination, such as a previous test, defective vision or hearing.

Through intent in some cases and carelessness in others inaccuracies in the reported age of a child will occur. The examiner should be careful to check the age reported with other available records.

An excellent point at which to start a test is one year below the mean age of the grade to which the child's work rightfully belongs. This holds true whether the child be bright, average, or dull. Objective tests should be given first, rather than memory tests or those involving abstract reasoning. Picture tests lead to an easy and natural conversation between examiner and examinee. It may be necessary to give several tests before locating the basal year.

In actual practice it is not always possible or wise to follow the order of the tests explicitly. When finding the basal year, if the examiner starts too low and the child answers successfully with no indication of limitations, it would be folly to plod on through succeeding years until the scattering point is found. Time and energy would be wasted. It is wiser to give one or two tests from several years, until there is some suggestion of failure. In many cases it is best to give the starred questions through several years, and then administer additional tests to complete the examination. The basal year is located more readily and more satisfactory results are assured if for any reason the test may be cut short. A record of several years is particularly necessary with retarded children, as their successes and failures scatter more than those of average children.

Another reason for altering the original order of the tests occurs when a child balks or becomes upset over one particular type of test. If for some reason he refuses to speak, tests, such as the weights or the ball and field, may be introduced out of turn until the child gains confidence. When a child refuses to use a pen or pencil, instead of insisting that he do so, his attention should be momentarily distracted by some other test, such as the picture test, and the objectionable test approached again later.

No definite time can be assigned for the duration of an examination, but care should be exercised that it is not prolonged beyond the point of fatigue.

Every examination should be recorded verbatim if possible, but a test should not be delayed on this account. Plus signs are adequate to score success in the number spans, the date, making change, and other tests where *there can be no variation in the accepted form of answer.* Minus signs on the other hand do not give sufficient information. Failure in a number span, for instance, may be caused by an abbreviation of the span, transposition of the digits, or substitution. In case of all doubtful answers and failures, the response should be recorded.

It is essential to have a fairly complete record if the results are to be used at any time by another official. Moreover, a complete record is of greater value for both diagnosis and prognosis.

The examination record Form A.C. 3 has been designed to keep information regarding the child in as compact a form as possible and to avoid the necessity of using separate sheets of paper for any part of the test. The front page, as explained in a previous Chapter, is to be used by the grade teacher, the nurse, and the examiner. The inside has space for recording tests for years III to XVIII, inclusive. The blank space beside year VII should be used for recording answers to the picture test. At the bottom of the page is a space for the examiner's observations regarding the child's attitude and any peculiarities of manner or response which may be noted. These should be recorded at the time of the test, otherwise they may be forgotten.

In recording 6 it is usually best to indicate the words by dots or strokes. Dots or cross-strokes can mark repetitions. Half-minutes should be shown.

The back of the form has been arranged for the child's work, namely, the drawings of the square IV, 4; the diamond VII, 6; the designs X, 3; and the dictation for VIII, Alt. 2. These records are valuable, and ought not to be placed on separate sheets of paper.

Dubious scoring should always be indicated. If an examiner is uncertain of the value of an answer, he should indicate this on the record. Several dubious responses will materially alter the final score. When the intelligence quotient is determined, the record should show if the results are considered satisfactory or unsatisfactory by the examiner.

The examination of foreign-speaking children sometimes presents difficulties. If retarded, their abilities are usually overestimated, as too much allowance is made for language handicap. It should not be forgotten that there is a high correlation between the facility with which a child adapts himself to our language and his success in school.

A re-test should be given all children where there is the possibility of a handicap having influenced results. This should be given a year later, in some cases at the end of six months. Re-tests should, also, be given children first tested in the primary grade. Children who test around 80 I.Q. at seven years of age will sometimes drop to 75 or lower a year or two later.

### *Year III*

The chief obstacles which arise in the administration of tests for this year are shyness on the part of the child, and inability to express himself clearly owing to baby talk or other speech defects. If there is any doubt regarding the value of answers given by a very young child, the result should be marked dubious, and a re-test made at a later date.

When tests of this year are given to older retarded children speech obstacles are to be regarded as an unfavourable sign.

### *Year IV*

The drawings for test 4 should be placed on the back page of Form A.C. 3. In scoring the comprehension questions, considerable leeway should be given, the guiding principle being that the answer shall indicate a logical course of action to meet the situation. In giving the number span for this year, start with three digits. In all number spans start one digit less than the final result expected.

### *Year V*

1. Testing two weights. This test differs from the weight test in Year IX in that the method can be demonstrated. Note

if the child returns the block from the same hand each time. Stereotyped answers are an unfavourable sign, especially if carried through several tests. This tendency may appear in test 3, when, instead of making an aesthetic comparison for all three pairs of faces, the child may make one and then merely indicate the other faces on the same side of the card.

4. Definitions in terms of use. If the definition is descriptive of material, or better, note should be made of the fact. Sometimes a child will balk at the idea of describing a chair when there are two so obviously present. The look of withering scorn cast at the examiner will plainly indicate his state of mind. Substituting the word horse or the name of another object not present may relieve the tension.

6. The three commands in test 6 must be given in correct order without clue or indication from the examiner. Should an examiner unconsciously glance at the object of the next command, a child is not slow in grasping such a clue. This test is of practical interest to teachers of retarded children. If a child cannot remember three simple commands, he should not be expected to remember complicated instructions in a lesson.

Alt. 1. This test is useless, unless the reported age has been checked by the teacher. Many children answer with an air of assurance which is deceiving. The test is not a good one. It is influenced by the child's environment and sometimes by a discussion of ages in the classroom previous to the examination.

### *Year VI*

4. Comprehension questions. A large number of children pay little attention to rain otherwise than to hasten their steps when the downfall becomes uncomfortable. Their answer to the first question is unvaryingly "Run." This answer should be given credit.

6. In the second sentence, "Walter had a fine time on his vacation. He went fishing every day," the word "vacation" should be changed to "holiday," and the word "fine" to "good." This gives the same number of syllables and the substituted words are more familiar to our children. The sentence

will read, "Walter had a good time on his holiday. He went fishing every day."

### *Year VII*

2. Picture Test. This test is an excellent one with which to begin an examination. It produces an easy exchange of conversation between the examiner and the child. The fundamental idea is that the child shall show association of ideas in his answer, not isolated thoughts. The best form of description answers the thought, "What are they doing?"

5. Differences. This is another test where a stereotyped line of thought may be conspicuous. Indicate its occurrence when recording the answer.

6. The diamond test. The standard test calls for pen and ink as the medium to be used. Many children are examined who have never used a pen. Under such circumstances it would be unfair to insist on its use. A pencil should be substituted.

### *Year VIII*

1. Ball and Field. This test has lost its usefulness in many places owing to coaching. If a child has failed in all tests of Year X and gives a superior plan for the ball and field test, he should not be credited with success. When the child being tested is under eight years of age, it is recommended that the word "suppose" in the directions be changed to "pretend"; the word "direction" be changed to "where," and the words "great big" be inserted before "field." The directions will then read: "Let us pretend that your baseball has been lost in this great big round field. You have no idea what part of the field it is in. You don't know where it came from, how it got there, nor with what force it came. All you know is that the ball is lost somewhere in the field. Now, take this pencil and mark out a path, to show me how you would hunt for the ball so as to be sure not to miss it. Begin at the gate and show me the path you would take."

2. Counting backwards. Teachers are warned not to be too exacting regarding time in this test. If the pupil counts

steadily and with assurance, a few seconds over time should not nullify his answer.

3. Comprehension questions. In the second question, the word "tardy" should be changed to "late," The examiner will have to investigate local customs before scoring minus for such answers as "go home," "bring a note," etc. In the third question, the word "ought" should be used. It is also preferable to use the word girl or boy, depending on the sex of the child tested. The question to a boy will be, "What ought you to do if another boy hits you without meaning to do it?"

4. Similarities. In questioning the child regarding similarities, it is permissible to substitute the word "same" in place of "alike," if the child does not seem to comprehend the question. This is particularly needful among children who speak a foreign language.

Teachers should note which children fail in this test. If a child cannot see any similarity between an apple and an orange when asked to call their images to mind, how will he be able to understand generalized rules of conduct?

5. Definitions superior to use. If the child appears unfamiliar with the words balloon, tiger, football, soldier, Terman suggests substituting one of the following: automobile, battleship, potato, store. In small localities and some rural areas children are unfamiliar with the word tiger. The word potato is recommended in such cases.

6. Vocabulary. It is recommended that examiners give the first column only and multiply the results by two. The test is an excellent one, but has several drawbacks. The two columns are of unequal difficulty, and require too much time when there are a large number of children to be tested.

The attention of examiners is called to the fact that this is a test of an individual's "understanding" vocabulary. Every individual has three vocabularies, a speaking vocabulary, a writing vocabulary, and an understanding one. The first is the most meagre, the last the most comprehensive. It is the understanding vocabulary which is being checked by this test. Dictionary definitions are not expected. It is only necessary for the child to show that he has a reasonable meaning attached to the word.

The omission of the first few words when only one column is to be given is not recommended, partly because retarded children occasionally fail with one or more of these words, partly because a feeling of confidence is inspired by starting with easy words.

Alt. 2. Dictation. This test depends too much on environmental circumstances to be considered a test of pure intelligence. It does, however, correlate with a child's progress in school. It, moreover, has a pacifying effect on grade teachers who, like parents, feel that no child's intelligence could be tested if he has not demonstrated his ability or inability to read and write. It also gives a permanent record of the child's ability at the time of the test. For these reasons it is wise to include it. For shy children it can be substituted for test 5. On administering the test, a pencil rather than pen and ink should be used.

### *Year IX*

1. Date. This test is of unequal difficulty at different times. It does, however, give a wonderful insight into a child's orientation as regards time. If a child cannot understand the spacing and passage of the time he lives in, how can he be expected to grasp the larger and more generalized facts of history and geography? Results of this test showing a lack of comprehension as distinguished from inaccuracy should be noted.

5. Sentence Test. In giving the directions for this test it is suggested that the word "story" be used after "sentence" when testing little children. It may, of course, be misleading to one or two, but most primary children use the word story for both number and language lessons. It is also suggested that the words "school, girls, boys," be substituted for "desert, rivers, lakes" in section (*c*) of this test.

### *Year X*

2. Absurdities. This test seems to run to rather gruesome statements. It is hoped that future revisions will associate

humour with more cheerful topics. The statement about the boy and bicycle literally interpreted contains no absurdity. When in doubt concerning the candidate's interpretation, the examiner may give the question in the form, ". . . they think he will get well again."

3. Designs. These designs give a picture of a child's visual memory. It is interesting and useful for a teacher to compare the abilities of children in regard to auditory and visual memory.

4. Reading. Critics of this test say it depends too much on environment. This is probably true. It gives, however, indications of much value to those interested in a child's school progress. The latter part of the test is more indicative of ability, since it is of greater importance that the child understands what he reads than that he reads fluently. To officials dealing with the child, however, it is also of value to know the speed and fluency with which he reads. The child who takes seven times as long to read a selection as the average child cannot keep pace with regular classes in any subject which includes written instructions. It is wise to record this test as fully as possible.

5. Comprehension questions, fourth degree—"What ought you to say when some one asks your opinion about a person you don't know very well?" The word "opinion" is rather difficult for children with a limited speaking vocabulary, though many of them could adequately face the situation implied. It is recommended that, in dealing with the foreign-born, or children of restricted environment, the word "think" be substituted so that the question reads, "What ought you to say when some one asks what you think of a person whom you don't know well?"

The second question is more easily understood when either the word "*beginning*" or "*starting*" is used. It is wise to omit the word "*undertaking*" entirely.

The word "actions," in the third question, is sometimes difficult for children to understand. If the examiner feels the child is in doubt as to its meaning it is permissible to say, "Why should we judge a person more by what he does than by what he says?"

6. Naming sixty words. While a record of words named by the child is extremely valuable, it is often wiser merely to indi-

cate them by a dot or stroke. Children watching the examiner will unconsciously slacken speed if they realize the examiner cannot keep pace. It is likewise embarrassing for some children to watch the recording of every word.

### *Year XII*

2. Abstract words. This test is particularly difficult for retarded children. Failure in this test indicates inability to deal with abstract terms and generalizations. Teachers interested in retarded children should note this fact.

3. Ball and field. This is an interesting test, but, owing to the influence of coaching, is useless at times. If children succeed in giving a superior plan, but fail in all other tests for year X, the test should be disregarded.

4. Disarranged sentences. Where the candidate cannot read, give an abbreviated test for year XII.

5. Interpretation of fables. The chief drawback to this test is the length of time necessary to administer it. The scoring is somewhat difficult, particularly with border-line children who only partially understand and partially express the ideas presented.

7. Pictures. By the age of twelve a child should have some idea of the underlying meaning of pictures. He should associate objects with the abstract relationship implied, just as he should understand the abstract terms of conduct given in test 2. Mistakes in scoring occur when good description only is given. The correct reply should be a response which will answer the question "Why?"

8. Similarities. The examiner should not fail to ask the supplementary question, "Explain what you mean," when indefinite statements are given, such as, "They are all of use."

### *Year XIV*

2. Induction test. This is an excellent test. There is concrete material with which to work. There are definite progressive steps. The scoring is not difficult. The examiner should have a suitably thin paper and sufficiently sharp scissors,

(onion skin is excellent, or heavy white tissue paper). If the examiner has to struggle with heavy paper and dull scissors the basic idea of the test may be lost.

3. President and King. This test is quite unsatisfactory for use in Ontario. The substitution of the number span of the alternate test is recommended.

4. Problems of fact. This is not an altogether satisfactory test. The first two problems seem to be answered readily by retarded children who are wise in worldly experience. The last problem is somewhat out of date, particularly in rural areas.

5. Arithmetical reasoning. This test is criticized by some examiners because it uses knowledge learned in school. The test is not a test of school knowledge so much as a test of application of knowledge to life problems. The average child should have learned to work the problems correctly on paper several years before fourteen.

### *Years XVI, XVIII*

Little more need be said regarding the tests of these years than has already been stated in the standard text. In regard to test 3, XVI, it might be wise to reiterate that success depends on the conception of contrast between abstract terms rather than on the language expressing it.

It is more difficult to judge the mental ability of children suffering from a physical handicap than that of normal children. In some cases it is impossible to use the same tests or procedure. There is always doubt whether the results indicate permanent or temporary limitations. Handicaps limit experience. This has a crippling effect on development. The question then arises to what extent the child may improve under favourable circumstances.

The child who cannot run about and is thereby confined to the narrow precincts of his home or room, misses the developing influence of a larger world. Under improved conditions his horizon may be widened, and a later examination may show better results in those tests which are influenced by environment. Likewise, spastics, stammerers, and other similar cases, find such difficulty in expressing themselves that their real ability is likely to be under-estimated. After special training they develop greater facility of expression, which raises their rating on a re-test.

A child with severe auditory defect lives in a world cut off from many verbal associations and, therefore, misses the information which comes incidentally through conversation. Children with such defects are therefore difficult to test. Even when the defect is slight, the examiner may not know whether the question has been heard correctly or not.

In examining children with a hearing handicap, the number span, counting backwards, weights, and similar tests are satisfactory, since the understanding of the problem can be checked by the answer. The introduction to these tests is comparatively brief, making them preferable to tests having a long preamble, such as the ball and field or the fable tests.

The examiner will likewise have to make a suitable selection for children who stammer or suffer from any severe speech defect. It should be allowable for a severe stammerer to read the selection silently in X 4 and give the memories orally. In the diamond test and the designs, failure should not be scored against the child if he fails through lack of motor control. A more suitable question from the alternative tests should be given. The examiner must consider the essential requirements of each test rather than the mechanical application of rules.

In judging physical variants, it should not be forgotten that the brighter the child the less burden his handicap will be. A gifted child will use his abilities to overcome his disabilities. A dull child has not the wit to do this, so even a slight physical handicap may be a heavy burden to a child whose I.Q. falls in the eighties or lower.

*Blind:* For blind children a special adaptation of the *Terman Revision* has been prepared by Irwin and Hayes. In this scale all tests requiring vision have been eliminated and others substituted. At present the scale is in a provisional form, but is quite usable.

*Deaf:* Tests for totally deaf children have been more fully developed than tests for the blind. From England comes a scale called *Performance Tests for the Deaf*, by Drever and Collins. This series combines tests from a number of scales, including several from the Binet, which can be demonstrated by pantomime, need little equipment, and are comparatively easy to administer.

Another series of tests for the deaf is *A Scale of Performance Tests*, by Pintner and Patterson. This is good for children up to fourteen years of age, but requires elaborate and expensive equipment. It is more suited to clinical than field work.

The *Porteous Maze Tests* are a series of maze puzzles of increasing difficulty printed on paper. They are excellent for supplementary information, but the I.Q. from a scale of one type cannot be compared to the I.Q. obtained from a scale which tests more varied abilities.

Teachers should consult the Department of Education before attempting the mental examination of children with extreme physical handicaps.

## Chapter II

# ACCOMMODATION AND EQUIPMENT FOR TRAINING AND PROMOTION CLASSES

### Accommodation

TRAINING and promotion classes require a standard classroom, that is one designed to accommodate forty pupils. As the enrolment of these classes varies from sixteen pupils to a maximum of twenty-four, only half the usual number of desks is required, leaving space for manual training benches, work tables, and other equipment necessary for extra-curricular activities.

The location and desirability of the room will influence the attitude of children entering the class, and of their parents, as well as the attitude of other children towards the group. The placing of retarded pupils in basements or other rooms which are considered undesirable for normal classes throws a stigma upon these children. Housing them in an adjoining building instead of the main building, unless, of course, other classes have quarters there also, suggests segregation and is a cause of unkind remarks. Parents of auxiliary class pupils object to their children being singled out, and have a right to expect accommodation as healthful and attractive as that provided for other children. It is wise, then, to choose a classroom so located and of such a type that it will naturally be considered an integral part of the school.

The questions of sunshine and outlook are important, because many of the children spend the major part of their school career in the auxiliary room. Children in the regular grades are moved from room to room, and have opportunity at some time in their school career of being in desirable quarters. Sunshine and a pleasing outlook are beneficial to both mental and physical health. Both are impossible with basement windows facing a concrete area, or with small frosted panes high overhead. The mental effect of such restrictions extending over several years is difficult to estimate. Plenty of sunshine and plenty of window space are highly desirable.

Lavatories and exits ought to be taken into consideration when dealing with training classes, as some of the children may be quite young. This question is not a problem in regard to promotion classes as the pupils are all thirteen years of age or over.

Running water should be installed in both training and promotion classes. Water is required frequently for use in manual activities such as reed work. It is also necessary from the standpoint of cleanliness. Personal habits of cleanliness being strongly emphasized in the training of special class children, opportunity must be given for their observance in the routine of the school. Morning inspection and clean-up are part of the daily routine. Clean-up periods precede certain lessons such as cooking, and of necessity follow lessons where glue, paint, and similar materials are used. It is not satisfactory to have water carried to the classroom, and it is not advisable for the teacher to send children far away from supervision to wash.

An electric outlet is of considerable value in all training and promotion classes. Craft work and other forms of manual activity are limited without this facility. In advanced metal work heat is necessary. Articles being constructed in a sewing-class should be pressed frequently with an iron. If no ironing is possible, laundry work has to be omitted. Cooking and a hot dish at noon are likewise impossible without heat. The lack of a hot dish at noon is a hardship where children travel a distance to the class and have to remain during noon recess.

Display shelves for manual work and burlap pin boards for the display of academic work are essential. Children in training and promotion classes have difficulty in visualizing or dealing with the abstract. They must have something concrete on which to build their ideas. Hence the presentation of finished models is of more importance than in other classes.

Extra cupboards are required on account of the greater amount of material and equipment used. Every classroom in the school should be furnished with cupboards for books and academic supplies. There should also be accommodation for the outdoor garments of the teacher and pupils. In training and promotion classes this accommodation is needed for only sixteen to twenty-four pupils. The extra locker space available is helpful but not always suitable. The total cupboard space in an auxiliary training class should be not less than that supplied by two cupboards, 7 feet high, 4 feet wide, and 20 inches in depth. Provision should be made in part of this space for the proper storage of tools. A rack for lumber and reed should be provided. These provisions for supplies are necessary, not only to ensure tidiness in the room and economy of material and tools, but to teach the children proper habits in neatness and care of property.

Accommodation for training and promotion classes may be summarized as follows:

1. A standard classroom, suitably located in regard to school activities, with lavatories, exits, and pleasant outlook.
2. Accommodation for the outdoor garments of the teacher and for those of sixteen to twenty-four children.
3. Cupboard space for supplies and tools not less than that of two cupboards, 7′x4′x20″.
4. Running water and sink.
5. An electric outlet.
6. Display shelf and burlap pin board.
7. A rack for lumber and reed. This can be made of two shelves not less than 6′ long, 1′ in width. A two-inch guard is advisable.

### Equipment

Equipment in training and promotion classes needs to be more elaborate than in graded classes for several reasons: (1) It has to be sufficiently varied to cover the work of five or six grades instead of one. (2) As only part of the class recites at one time, much busy work is necessary to provide occupation for the remainder. (3) A larger portion of time is devoted to manual activities, and these activities cover a fairly wide range of subjects. (4) More concrete material is needed in teaching the three "R's," and more variety is required in order that there may be a constant repetition of facts without tiring the children.

The additions and variations in equipment cover such items as: (1) desks, (2) readers, (3) seat-work or busy work, (4) sand table, (5) phonograph, (6) work table, (7) manual training benches, (8) tools, (9) sewing machine, (10) cleanliness outfits.

1. *Desks:* Tables and chairs with a drawer for books are found to be more satisfactory than stationary desks. Small tables can be used more effectively for handwork than can desks as they can be moved together to form a large table or can be placed to one side if a clear floor space is desired. They should be of fairly heavy construction. If too light, they shift around, and if flimsy, they soon fall to pieces. Both tables and chairs should be properly rubber tipped. Three sizes are necessary for training classes, owing to the widely varying ages of the children. In promotion classes the two largest are usually all that are required. The sizes recommended are:

Table top..............30″x20″
Height of table......30″; 27″; 25″
Height of chairs....17″; 15″; 13″

If the school is already equipped with movable desks, these may be used instead of tables and chairs.

2. *Readers:* When children enter training and promotion classes, they have been repeating grades and have become too familiar with authorized readers to have any interest in them. Sets of other readers graded in difficulty should, in part, be substituted for these It is wise to use the authorized text at times, in order that the children may feel they are using the same books as other pupils in the school. Several readers for each grade may be necessary. When a child has read through one reader, he may not be sufficiently efficient in mechanical ability to progress to a reader of greater difficulty. Further practice should then be given in a reader with an equivalent vocabulary. An adequate supply of books for this purpose should be kept on hand.

There are many good readers on the market. The following general readers are suggested to replace the authorized texts when necessary:

*The Canadian Readers*, Books I, II, III, IV, published by The Macmillan Company, for Groups III, IV, V, and VI, respectively.

*The Silent Study Readers*, Books I, II, III, IV, published by J. M. Dent and Company, for Groups III, IV, V, and VI.

*The Canadian Work Play Books*, published by The Macmillan Company, for Groups I and II, III, IV and V.

This last series has a set of constructive work books to accompany them for seat-work, which may be used as class material.

Individual readers should supplement the regular lessons. Excellent little books for junior use can be purchased for four and five cents a copy. Care should be taken in their selection to ensure suitable vocabulary and print. Books with pictures, especially coloured pictures, are preferable to those without.

Primers are an important part of a training class library. The wise teacher will have more than one method represented in the collection. Retarded children seem to learn most easily by the word method, but it is sometimes necessary to try several methods before much response can be gained from the child. Several of different types are listed below:

*The Red Letter Primer*—Word and sound method. J. M. Dent & Sons.

*The Pat and Patsy Pre-primer*—Word and sentence method. J. M. Dent & Sons.

*My First Primer*—Word and sentence method. Copp, Clark Co.

*Our Little Reader*—Word and sentence method. W. J. Gage & Co.

*The Dominion Primer*—Word method. W. J. Gage & Co.

*The Song the Letters Sing*—A preparatory primer, Books I, II, IIA, word method. The Grant Educational Publishing Co.

*The Green Primer*—Combination word and phonic method. The Macmillan Company.

*The Maple Leaf Primer*—Word method. Copp, Clark Co.

*The Foundation of Reading*—Combination method. Thos. Nelson & Sons.

*Royal Crown Phonic Primers*—Thos. Nelson & Sons.

*Chambers Phonic Readers*—W. & R. Chambers, Ltd.

History and geography readers are interesting and valuable. History as a chronological series of dates and facts has little or no meaning for most of the children. It has, however, many outstanding characters and events which are of interest and can be used as illustrations of character and conduct. Geography readers are doubly valuable if used with sand-table or poster work. Several attractive publications containing stories couched in sufficiently simple language are on the market, and some of these should be included in the library.

3. *Seat-Work, or Busy Work*, as it is frequently called, consists of work which pupils do at their seats while other groups are having recitation lessons. It is work which re-emphasizes and develops lessons which have been taught previously by the teacher. Its nature is such that pupils may carry on alone and, in many types, verify results themselves. Very little time should be required to check the accuracy of answers.

A large amount of equipment for this type of work is necessary in training or promotion classes. Most of this equipment will have to be developed by the teacher and suggestions for its development and use are given in another chapter. Some, however, will have to be purchased when a class first opens. This will supply the teacher with material until she discovers the particular type of work which should be developed with her group, and will serve also as a foundation for later seat-work to be made in class. Every school supply company carries quantities of such equipment.

For *Arithmetic* printed number cards will be needed. These can either be purchased in boxes or bought by the sheet. Sheets of manilla are printed with numbers in squares which can be cut out by the children and placed in envelopes or boxes. Peg boards are useful. One or two can be purchased, then others may be made by older pupils. Coloured beads, lentils, dominoes, and plasticine should be provided. In junior groups the latter is useful for every subject.

Bean-bag boards, hoop-la, and marble games are useful for arithmetic activities. These can be made in the classes. Directions for making are given in the notes on woodwork.

For older children self-verifying arithmetic cards are useful. Many cards of problems can also be made by the teacher from catalogues and newspaper advertisements.

For *Reading and Language Work* letter cards are necessary.

These can be bought in boxes. A less expensive way is to purchase them in sheets and let the class cut them up. Sheets of manilla tag with the words printed for a series of graded exercises can be purchased. For instance, sheet one has words for the rhyme of "Jack and Jill" and also some fifty miscellaneous words. The next sheet contains names of colours with blocks of colour to match, number names to ten, with pictures to match, etc. Material for language lessons of this type will also have to be made by the teacher to re-emphasize the vocabulary which she is taking with the group.

Pictures with matching words and pictures with matching sentences can be purchased, and also made in class.

Crayons and plasticine can be used as well in reading as in arithmetic. Sewing cards may be purchased. Blank cards should be supplied for words or number facts.

For seat-work of a manual type, cards for wool or raffia weaving are very popular. Mats for weaving, spool knitters, rake knitters, and Tyndall looms (frames for weaving) may be needed.

4. *A sand table* is one of the most valuable pieces of equipment in training classes for teaching geography, civics, and construction work of various types. Many suggestions regarding the use of the sand table can be obtained from *Play Story Geography*. A sand tray 40″x36″x1½″ can be placed on a table for class use and stored in a cupboard when the lesson is finished. If there are senior boys in the group, it may be possible to construct such a sand tray in class.

5. *A phonograph* is part of the special equipment, as music plays an important part in the training of retarded children. Suitable records should be provided. They should include marches, waltz time, folk dances, and selections for developing music appreciation. The music appreciation records, "Introductory Course for Junior Grades," is particularly useful.

6. *A work table* of heavy construction is required. It is needed for all types of manual and craft work. The top should have a finish suitable for craft work, not a high polish.

7. *Manual training benches* are needed for woodwork. If the class contains both junior and senior pupils, two heights of

benches are desirable. Each bench should be fitted with two vices, in order to permit four children to use vices at one time. If the class is composed entirely of boys a third bench may be necessary. In a promotion class of boys four benches are required.

8. *A supply of tools* adequate for the size of the group will be necessary. Lists of these are given under the headings of the various crafts. These tools should be properly housed and stored as part of the training afforded.

9. *A sewing machine* may be purchased if the number of girls in the class warrants the expenditure. A new machine is not necessary for a class where a small group will be using it at irregular intervals. Second-hand treadle machines in good condition can be purchased quite reasonably. These are better for a beginner than electric machines, and are of the type used in the homes of most pupils.

10. *Personal cleanliness outfits* are essential in training and promotion classes. Running water and sink have been recommended. If these are impossible, an enamel hand basin should be provided. A mirror should be hung in every room at a height which renders it of use to the children. A shoe-cleaning outfit is also recommended.

Following is a summary of the special furniture and equipment required for training and promotion classes.

In mixed training and promotion classes the necessary equipment includes the list for academic work, woodwork, sewing, and bookbinding. Other crafts may be selected by the teacher.

In training and promotion classes for boys, the equipment for metal work will replace that for sewing.

In training and promotion classes for girls, cooking will replace woodwork.

Attention is called to the fact that government grants are paid on permanent equipment, not on goods listed under material.

The only reimbursement received on material comes either from a sale of work made in the class, or by the children purchasing the articles they make at the cost of materials used.

## EQUIPMENT FOR TRAINING AND PROMOTION CLASSES

Firmly-built tables and chairs, rubber tipped or provided with gliders, and a drawer or shelf for books.

Table top 30″x20″, heights 30″, 27″, 25″. Drawer 24″x16″.
Chair heights 17″, 15″, 13″.
Work table 8′x3′x2′3″ high.
2 Cupboards 7′x6′x18″, adjustable shelves and tool cabinet.
1 Sand table 40″x36″x1½″, 5-ply bottom.
1 Gramophone; Records, "Introductory Course for Junior Grades."
1 Mirror.
1 Shoe-cleaning outfit.

| ACADEMIC EQUIPMENT | | Type of Class | | | | | |
|---|---|---|---|---|---|---|---|
| | | Junior Training Class, boys and girls under 13 years. | Mixed Training Class, boys and girls all ages. | Training Class for Boys, boys all ages. | Training Class for Girls, girls all ages. | Promotion Class for Boys, boys over 13 years. | Promotion Class for Girls, girls over 13 years. |
| | Unit | Number Required | | | | | |
| Toy money | box | 2 | 2 | 2 | 2 | 2 | 2 |
| Number builders | set | 6 | 6 | 6 | 6 | — | — |
| Word builders | box | 6 | 6 | 6 | 6 | — | — |
| Sentence builders | set | 6 | 6 | 6 | 6 | 2 | 2 |
| Pictures and matching words | box | 6 | 3 | 3 | 3 | — | — |
| Self-keyed arithmetic cards | " | 2 | 2 | 2 | 2 | 6 | 6 |
| Language lessons | " | 2 | 3 | 3 | 3 | 3 | 3 |
| Dominoes | set | 2 | 1 | 1 | 1 | — | — |
| Toy printing oufit | | 1 | 1 | 1 | 1 | 1 | 1 |
| Coloured beads | gross | 2 | 2 | 2 | 2 | — | — |
| Pegs for peg boards | box 100 | 2 | 1 | 1 | 1 | — | — |
| Crayons | pk. | 18 | 16 | 18 | 18 | 10 | 10 |
| Plasticine—grey | lb. | 2 | 2 | 2 | 2 | — | — |
| Plasticine—green, red, blue, yellow, | lb. ea. | 1 | 1 | 1 | 1 | — | — |
| Supplementary Readers, as recommended | | | | | | | |
| *Made by Class* | | | | | | | |
| Rake knitter—round | | 1 | 1 | 1 | 1 | 1 | — |
| Peg boards 11″x11″, 10 holes x 10 | | 2 | 1 | 1 | 1 | — | — |
| Peg boards 6″x 6″, 5 holes x 5 | | 2 | — | — | — | — | — |
| Clock dial | | 1 | 1 | 1 | 1 | 1 | 1 |
| Counting blocks 1″—dyed 6 colours | set | 1 | 1 | 1 | 1 | — | — |
| Splints 6″x⅜″x⅜″—dyed 6 colours | " | 1 | 1 | 1 | 1 | — | — |

| WOODWORK | | Type of Class. | | | | | |
|---|---|---|---|---|---|---|---|
| | | Junior Training Class, boys and girls under 13 years. | Mixed Training Class, boys and girls all ages. | Training Class for Boys, boys all ages. | Training Class for Girls, girls all ages. | Promotion Class for Boys, boys over 13 years. | Promotion Class for Girls, girls over 13 years. |
| Name of Tool | Unit | No. of pieces required | | | | | |
| Light claw hammer, Maydole, No. 3 | each | 2 | 2 | 4 | 2 | 6 | 2 |
| Coping saw, adjustable blade, 6″ | “ | 6 | 6 | 6 | 6 | 6 | 6 |
| Coping saw, blades 6″, No. 60 | doz. | 4 | 4 | 6 | 2 | 2 | 2 |
| Fret saw, 12″ clearance | each | 1 | 2 | 3 | — | 2 | — |
| Fret saw blades | doz. | 1 | 1 | 2 | — | 1 | — |
| Back saw 10″ | each | 1 | 1 | 1 | 1 | 4 | — |
| Rip saw, Disston, 20″ | “ | 1 | 1 | 1 | 1 | 2 | — |
| Cross-cut saw, Disston, 20″ | “ | 1 | 1 | 2 | 1 | 2 | 1 |
| Bow saw | “ | — | — | 1 | — | 1 | — |
| Jack Plane | “ | — | 1 | 2 | — | 4 | — |
| Smoothing Plane, Stanley, No. 604 | “ | 1 | 1 | 1 | — | 1 | — |
| Spokeshave, Stanley, No. 151 | “ | 1 | 1 | 2 | 1 | 4 | — |
| Screw driver, 6″ blade | “ | 1 | 1 | 1 | 1 | 2 | 1 |
| Screw driver, 3″ blade | “ | 1 | 1 | 1 | 1 | 1 | 1 |
| Chisel, 1″, Common Firmer, Howard, No. 41 (handled) | “ | 1 | 1 | 3 | — | 4 | — |
| Chisel, ½″ Common Firmer, Howard, No. 41 (handled) | “ | 1 | 1 | 1 | 1 | 4 | 1 |
| Chisel, ¼″ Common Firmer, Howard, No. 41 (handled) | “ | 1 | 1 | 1 | — | 4 | — |
| File 8″, flat, medium | “ | 2 | 2 | 2 | 1 | 2 | 1 |
| File, 6″, half-round, medium | “ | 2 | 2 | 2 | 1 | 2 | 1 |
| File, 8″, half-round, medium | “ | — | — | 2 | — | 2 | — |
| Try square, 6″ | “ | 1 | 1 | 2 | 1 | 4 | — |
| Try square, 12″ | “ | — | 1 | 1 | — | 1 | — |
| Try square, and mitre, 9″ | “ | — | — | — | — | 1 | — |
| Brad-awl | “ | 1 | 1 | 2 | — | 2 | — |
| Shoemaker's knife or jack knife | “ | 4 | 6 | 6 | 1 | 6 | 1 |
| Oil-stone, India combination, 6″ | “ | 1 | 1 | 1 | 1 | 1 | 1 |
| Brace, 8″ sweep | “ | 1 | 1 | 1 | — | 1 | — |
| Brace, ratchet, 10″ sweep | “ | — | — | — | — | 1 | — |
| Set of auger bits ¼″, ⅜″, ½″, ¾″ | set | 1 | 1 | 1 | — | 1 | — |
| Set of centre bits, ⅝″, ⅞″, 1¼″, 1½″ | “ | — | — | 1 | — | 1 | — |
| Countersink | each | 1 | 1 | 1 | — | 1 | — |
| Bench whisk | “ | 1 | 1 | 1 | — | 4 | — |
| Steel ruler, 12″, graduated, ⅛″ and 1/16″ | “ | 1 | 1 | 2 | 1 | 4 | 1 |
| Hand drill and drill bits | “ | 1 | 1 | 1 | 1 | 1 | 1 |

| WOODWORK—*Continued* | | Type of Class | | | | | |
|---|---|---|---|---|---|---|---|
| | | Junior Training Class, boys and girls under 13 years. | Mixed Training Class, boys and girls all ages. | Training Class for Boys, boys all ages. | Training Class for Girls, girls all ages. | Promotion Class for Boys, boys over 13 years. | Promotion Class for Girls, girls over 13 years. |
| Name of Tool | Unit | No. of pieces required | | | | | |
| Marking gauge, 6″, Stanley, No. 65 | each | 1 | 1 | 1 | — | 4 | — |
| Sliding bevel | " | — | 1 | 1 | — | 1 | — |
| Protractor | " | 1 | 1 | 1 | 1 | 1 | 1 |
| Set square, 45° and 30°—60° | " | 1 | 1 | 1 | 1 | 1 | 1 |
| Compass | " | 1 | 1 | 1 | 1 | 1 | 1 |
| Nail set 1/16″, 1/8″ | " | 2 | 2 | 2 | 2 | 4 | 2 |
| Clamps, Taylor Forbes, No. 14, 4″ | pair | 2 | 2 | 4 | 2 | 4 | 2 |
| Bar Clamp | each | — | — | 1 | — | 1 | — |
| Oil-can | " | 1 | 1 | 1 | 1 | 1 | 1 |
| Varnish brushes, Bœckh, 3/4″, 1″, 1½″ | " | 2 | 3 | 3 | 3 | 3 | 1 |
| Monkey wrench | " | — | 1 | 1 | — | 1 | 1 |
| Carpenter's bench, height 2′3″–2 vices | " | 1 | 1 | 1 | — | — | — |
| " " 2′6″–2 vices | " | 1 | 1 | 1 | — | 4 | — |
| School with one promotion class, one wood lathe | " | — | — | — | — | — | — |
| School with two promotion classes, one jig saw (protected) | " | — | — | — | — | — | — |

## REEDWORK, RAFFIA, AND WEAVING

| Name of Tool | Unit | No. of pieces required | | | | | |
|---|---|---|---|---|---|---|---|
| Hand drill and set of bits | set | 1 | 1 | 1 | 1 | 1 | 1 |
| Pliers, diagonal cutting | each | 1 | 2 | 1 | 1 | 2 | 2 |
| Pliers, round-nosed | " | 1 | 1 | 1 | 1 | 1 | 1 |
| Scratch awl | " | 3 | 3 | 3 | 3 | 3 | 3 |
| Alcohol singeing lamp | " | 1 | 1 | 1 | 1 | 1 | 1 |
| Varnish brushes, 1½″ | " | 3 | 3 | 3 | 3 | 3 | 3 |
| Varnish brushes, 1″ | " | 3 | 3 | 3 | 3 | 3 | 3 |
| Raffia needles | pk. | 4 | 4 | 2 | 2 | — | — |
| Tyndall loom | each | 1 | 1 | 1 | 1 | — | — |
| *Optional* | | | | | | | |
| Rug frame or wood for its construction | | — | 1 | — | 1 | — | 1 |
| Punch or hook | each | — | 1 | — | 1 | — | 1 |

| SEWING, KNITTING, AND NOVELTY WORK | | Type of Class | | | | | |
|---|---|---|---|---|---|---|---|
| | | Junior Training Class, boys and girls under 13 years. | Mixed Training Class, boys and girls all ages. | Training Class for Boys, boys all ages. | Training Class for Girls, girls all ages. | Promotion Class for Boys, boys over 13 years. | Promotion Class for Girls, girls over 13 years. |
| Name of Tool | Unit | No. of pieces required | | | | | |
| Scissors, 8″, Weiss, No. 28 | each | 1 | 1 | 1 | 1 | 1 | 2 |
| Scissors, 6″, sharp points | “ | 6 | 6 | 9 | 9 | 6 | 18 |
| Scissors, 4½″, blind points | “ | 12 | 6 | 9 | 9 | — | — |
| Crochet hooks, No. 3 and No. 4 | “ | 3 | 3 | — | 6 | — | 6 |
| Crochet hooks, bone | “ | 4 | 4 | — | 4 | — | 4 |
| Tape Measure | “ | 1 | 1 | 1 | 2 | 1 | 2 |
| Sewing needles, No. 5 to No. 9 | pk. | 4 | 4 | 1 | 4 | 1 | 6 |
| Thimbles, No. 4, No. 5 and No. 6 | each | 2 | 2 | 1 | 6 | 1 | 6 |
| Bone knitting-needles, No. 8 | Pair | 3 | 3 | — | 6 | — | 6 |
| Bone knitting-needles, No. 10 | “ | 2 | 2 | — | 6 | — | 6 |
| Embroidery hoops, 2 sizes | each | 6 | 6 | — | 6 | — | 6 |
| Rake knitter, round or oblong (can be made) | “ | 1 | 1 | 1 | 1 | — | 1 |
| Electric iron | “ | — | — | — | 1 | — | 1 |
| Sewing machine | | — | opt. | — | 1 | — | 1 |
| School with 2 promotion classes—one electric machine | | — | — | — | — | — | 1 |

## BOOKBINDING AND PAPER WORK

| Name of Tool | Unit | No. of pieces required | | | | | |
|---|---|---|---|---|---|---|---|
| Eyelet punch | each | 1 | 1 | 1 | 1 | 1 | — |
| Sharp knife | “ | 6 | 6 | 6 | 6 | 6 | — |
| Eyelet setter | “ | 1 | 1 | 1 | 1 | 1 | — |
| Scissors—6″ | “ | 10 | 8 | 9 | 9 | 8 | 8 |
| Dividers | “ | 1 | 1 | 1 | 1 | 1 | — |
| Set square 45°, 30° and 60° | “ | 1 | 1 | 1 | 1 | 1 | — |
| Protractor | “ | 1 | 1 | 1 | 1 | 1 | — |
| Paper cutter—10″ is helpful, but not essential | “ | — | — | — | — | — | — |

## LEATHERWORK

| | | Type of Class | | | | | |
|---|---|---|---|---|---|---|---|
| | | Junior Training Class, boys and girls under 13 years. | Mixed Training Class, boys and girls, all ages. | Training Class for boys, boys all ages. | Training Class for Girls, girls all ages. | Promotion Class for Boys, boys over 13 years. | Promotion Class for Girls, girls over 13 years. |
| Name of Tool | Unit | No. of pieces required | | | | | |
| Six-way punch | each | — | 1 | 1 | 1 | 1 | 1 |
| Dome fastener | " | — | 1 | 1 | 1 | 1 | 1 |
| Design punches | " | — | 2 | 2 | 2 | 2 | 2 |
| Nut picks with points ground or polished | " | — | 3 | 3 | 6 | 6 | 6 |
| Wooden mallet | " | — | 1 | — | 1 | 1 | — |
| Steel ruler—12″ | " | — | 1 | 1 | 1 | 1 | — |
| Sharp scissors—8″ | " | 1 | 1 | 1 | 1 | 1 | — |
| Sharp knives with point (razor blades with backs are useful) | " | — | 1 | 1 | 4 | 4 | — |
| Clamps | pair | — | 2 | 2 | 3 | 3 | — |
| Oil-stone and oil-can | " | — | 1 | 1 | 1 | 1 | — |
| Dividers | " | — | 1 | 1 | 1 | 1 | — |
| Set square, 45° | " | — | 1 | 1 | 1 | 1 | — |
| Glass to cut on is very useful | | — | — | — | 1 | 1 | — |

## METAL WORK

| Name of Tool | Unit | No. of pieces required | | | | | |
|---|---|---|---|---|---|---|---|
| Round nose pliers, 6″ | each | — | — | 1 | — | 6 | — |
| Flat nose pliers, 7″ | " | — | — | 1 | — | 6 | — |
| End cutting pliers, 5½″ | " | — | — | 1 | — | 4 | — |
| Dividers, 10″ | " | — | — | 1 | — | 6 | — |
| Rivet set | set | — | — | 1 | — | 1 | — |
| Tin seamer, ¼″ | each | — | — | 1 | — | 1 | — |
| Tinners' hammers, cross pein, ¾ lb. | " | — | — | 1 | — | 6 | — |
| Machinists' hammer, ball pein, ¾ lb. | " | — | — | 1 | — | 2 | — |
| Tinsmiths' snips | " | — | — | 1 | — | 6 | — |
| Tinsmiths' circular snips, small | " | — | — | 1 | — | 1 | — |
| Hack saw, 12″ | " | — | — | 1 | — | 1 | — |
| Hack saw blades | doz. | — | — | 1 | — | 1 | — |
| Soldering coppers, 2-lb | | — | — | 1 | — | 4 | — |
| Iron vice, heavy 4″ fore | each | — | — | 1 | — | 1 | — |
| Gas soldering pot or Charcoal soldering pot | " | — | — | 1 | — | 1 | — |

| METAL WORK (*Continued*) | | Type of Class | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | | Junior Training Class, boys and girls under 13 years. | Mixed Training Class, boys and girls, all ages. | Training Class for Boys, boys all ages. | Training Class for Girls, girls all ages. | Promotion Class for Boys, boys over 13 years. | Promotion Class for Girls, girls over 13 years. |
| Name of Tool | Unit | No. of pieces required | | | | | |
| File, round, half-round, triangular, flat | | | | | | | |
| (*a*) medium | each | — | — | 1 | — | 1 | — |
| (*b*) smooth | “ | — | — | 1 | — | 1 | — |
| Framing square, 16″x24″ | “ | — | — | 1 | — | 1 | — |
| Hand drill | “ | — | — | 1 | — | 1 | — |
| Scratch brush | “ | — | — | 1 | — | 4 | — |
| Steel rulers, 12″ | “ | — | — | 4 | — | 6 | — |
| Hand drill | “ | — | — | 1 | — | 1 | — |

When there are four or more promotion classes for boys the following machinery should be installed:

Small emery wheel and drill.
1 Folding machine, 24″.
1 Rolling machine, 24″.
1 Burring and wiring machine.

## SUGGESTIONS FOR SPECIAL EQUIPMENT IN TRAINING OR PROMOTION CLASSES FOR GIRLS

### COOKING

| *Article* | *No. of Pieces* | *Article* | *No. of pieces* |
|---|---|---|---|
| Tea kettle | 1 | Corkscrew | 1 |
| Double boiler | 1 | Egg beater | 1 |
| Saucepan with cover, 2 qt. | 1 | Potato masher | 1 |
| Saucepan with cover, 4 qt. | 1 | Rolling pin | 1 |
| Frying pan | 1 | Wooden mixing spoons, set | 1 |
| Wire strainer | 1 | Knives (Nevada) | 12 |
| Sink strainer | 1 | Forks (Nevada) | 12 |
| Granite plates, 9″ | 6 | Tea spoons (Nevada) | 24 |
| Granite plates, 11″ | 6 | Serving spoons | 3 |
| Baking sheets | 2 | Salt and pepper shakers | 1 |
| Oven pans | 2 | Vegetable brushes | 2 |
| Cake tins, 8″x12″ | 1 | Cups and saucers | 24 |
| Cake tins, 9″x9″ | 2 | Bread and butter plates | 12 |
| Granite baking dish | 3 | Tea plates | 12 |
| Strainer | 1 | Glasses | 12 |
| Custard cups | 20 | Teapot | 1 |
| Gem tins | 24 | Coffee pot | 1 |
| Bread board | 1 | Cream jug | 1 |
| Cake cutter | 1 | Sugar bowl | 1 |
| Mixing bowls, set | 1 | Broom | 1 |
| Measuring cup, glass | 1 | Dust pan | 1 |
| Measuring cup, tin | 1 | Scrub brush | 1 |
| Measuring spoons, set | 1 | Garbage pail | 1 |
| Flour sifter | 1 | Dish towels | 12 |
| Enamel jug, 1 quart | 1 | Dish cloths | 6 |
| Butcher knife | 1 | Wash cloths | 6 |
| Bread knife | 1 | Dish pan (large) | 1 |
| Paring knives | 4 | Dish pan (medium) | 1 |
| Spatula | 1 | Tray | 2 |
| Can opener | 1 | Stove | 1 |

Tins or jars for the storage of tea, sugar, etc., can be prepared by the class.

The equipment listed, exclusive of the cost of the stove, can be purchased for fifty dollars.

In training classes where the number of girls warrants the inclusion of cooking in the programme, a modified equipment can be purchased, exclusive of the stove, for twenty dollars.

In training classes, where many children stay for lunch and a hot dish is prepared with the approval of the principal and the inspector, suitable equipment may be provided.

## MATERIAL FOR HANDWORK

| WOODWORK | | Type of Class | | | | | |
|---|---|---|---|---|---|---|---|
| | | Junior Training Class. boys and girls under 13 years. | Mixed Training Class, boys and girls all ages. | Training Class for Boys, boys all ages. | Training Class for Girls, girls all ages. | Promotion Class for Boys, boys over 13 years. | Promotion Class for Girls, girls over 13 years. |
| Craft | Unit | Amount required | | | | | |
| Basswood, ¼″x8″, D2s | ft. | 50 | 50 | 50 | 25 | 50 | 10 |
| “ ⅜″x8″, D2s | “ | 50 | 50 | 50 | 25 | 50 | 25 |
| “ ½″x6″, D2s | “ | 10 | 25 | 25 | 10 | 50 | — |
| “ ⅞″x6″, D2s | “ | 10 | 25 | 25 | 10 | 50 | 10 |
| Strip basswood, ⅜″x¼″, D2s | “ | 100 | 100 | 100 | — | — | — |
| “ ⅜″x½″ | “ | — | — | 50 | — | 100 | — |
| Dowels, ¼″ | “ | 50 | 50 | 50 | 50 | 10 | — |
| “ ½″ | “ | 10 | 10 | 10 | 10 | 10 | — |
| ½″ Nails—wire finishing, No. 20 | lb. | 1 | 1 | 1 | 1 | 1 | ½ |
| ¾″ “ “ “ No. 17 | “ | 1 | 1 | 1 | 1 | 1 | 1 |
| ½″ Screws, No. 4. (flat and round head) | doz. | 2 | 2 | 2 | 2 | 2 | 2 |
| ¾″ “ No. 5. “ “ “ | “ | 2 | 2 | 2 | 2 | 2 | 2 |
| Cup hooks | “ | 2 | 2 | 2 | 2 | 2 | 2 |
| LePage's glue, ½ pts | each | 2 | 2 | 2 | 2 | 2 | 2 |
| Sand-paper, No. 0 and 00 | doz. | 1 | 1 | 1 | 1 | 1 | 1 |
| “ “ No. 1 | “ | 1 | 1 | 1 | 1 | 1 | 1 |
| Enamel, ½ pint tins, black | each | 1 | 1 | 1 | 1 | 1 | 1 |
| “ ½ “ “ white | “ | 2 | 2 | 2 | 2 | 2 | 2 |
| “ ½ “ “ (blue, green, red, yellow, brown, 1 of each) | | 5 | 5 | 5 | 5 | 5 | 5 |
| Turpentine | quart | 1 | 1 | 1 | 1 | 1 | 1 |
| Wood Alcohol | “ | 1 | 1 | 1 | 1 | 1 | 1 |
| Shellac | “ | 1 | 1 | 1 | 1 | 1 | 1 |

### SEWING

| | Unit | Amount required | | | | | |
|---|---|---|---|---|---|---|---|
| Gingham, checked | yard | 10 | 10 | — | 20 | — | 20 |
| Flannelette | “ | 5 | 5 | — | 20 | — | 50 |
| Unbleached cotton, thin quality | “ | 5 | 5 | — | 10 | — | 10 |
| Java canvas (66″) | “ | — | 1 | — | 1 | — | 1 |
| Penelope canvas (27″) | “ | 2 | 2 | 1 | 2 | — | 2 |
| Apron cambric (if cooking is taken) | “ | — | 10 | — | 20 | — | 30 |
| Sewing cotton, No. 50 and No. 60, white | doz. | 1 | 1 | — | 2 | — | 2 |

| SEWING—Continued | | Type of Class | | | | | |
|---|---|---|---|---|---|---|---|
| | | Junior Training Class, boys and girls under 13 years. | Mixed Training Class, boys and girls all ages. | Training Class for Boys, boys all ages. | Training Class for Girls, girls all ages. | Promotion Class for Boys, boys over 13 years. | Promotion Class for Girls, girls over 13 years. |
| | Unit | Amount required | | | | | |
| D.M.C. Embroidery cotton—red, green, blue, black, yellow, mauve, skeins | each | 6 | 6 | — | 6 | — | 6 |
| Darning wool, assorted colours (cards) | doz. | 1 | 1 | 1 | 1 | 1 | 1 |
| Knitting wool—black, red, blue, orange, rose, mauve, green, copenhagen blue, beige, pink, white (ball) | each | — | 3 | — | 4 | — | 4 |
| Elastic, buttons, hooks and eyes as needed | | — | — | — | — | — | — |

## REED AND RAFFIA WORK

| | Unit | Amount required | | | | | |
|---|---|---|---|---|---|---|---|
| White Pine, ⅝″x 8″, D.2s | lin.ft. | 25 | 25 | 50 | 50 | 50 | 50 |
| Reed No. 2 | lb. | 6 | 6 | 16 | 6 | 6 | 6 |
| “ No. 3 | “ | 6 | 6 | 10 | 10 | 10 | 10 |
| “ No. 4 | “ | 2 | 2 | 4 | 4 | 4 | 4 |
| “ No. 5 | “ | 2 | 2 | 2 | 2 | 2 | 2 |
| “ No. 6 | “ | 1 | 1 | 1 | 1 | 1 | 1 |
| Flat reed No. 6 | “ | 1 | 1 | 1 | 1 | 1 | 1 |
| Asphaltum varnish | pint | 1 | 1 | 1 | 1 | 1 | 1 |
| Turpentine | quart | 1 | 1 | 1 | 1 | 1 | 1 |
| Shellac | “ | 1 | 1 | 1 | 1 | 1 | 1 |
| Alcohol (Methyl) | “ | 1 | 1 | 1 | 1 | 1 | 1 |

## PAPER WORK, CARDBOARD WORK, BOOK-BINDING, MODELLING

| | Unit | Amount required | | | | | |
|---|---|---|---|---|---|---|---|
| Coloured paper, 6″x 6″ assorted colours | pk. | 2 | 2 | 1 | 1 | — | — |
| Mounting paper, 9″x12″ assorted colours | “ | 2 | 2 | 2 | 2 | 2 | 2 |
| Paste, 8 oz. jar | each | 1 | 1 | 1 | 1 | 1 | 1 |
| Paper fasteners, ½″ | box | 1 | 1 | 1 | 1 | 1 | 1 |
| Book-binder's cloth—black, blue (yd.) | each | 1 | 1 | 1 | 1 | 1 | 1 |
| Book-binder's cloth—green, red (yd.) | “ | — | 1 | 1 | 1 | 1 | 1 |
| Plasticine—grey | lb. | 2 | 2 | 2 | 2 | 2 | — |
| “ —green, red, blue, yellow, brown (lb.) | each | 1 | 1 | 1 | 1 | 1 | — |

### CHAPTER III

## SCHOOL ORGANIZATION

PUBLIC and Separate School Courses of Study have been organized into successive annual gradations on the presupposition:

1. That the whole programme is of such fundamental importance as to reasonably require its accomplishment by all elementary school children.
2. That the content of each subject on the curriculum lends itself to being divided into yearly apportionments which articulate one with the other and equate in difficulty with analogous divisions in other studies on the course.

According to their achievements pupils are classified into Forms on the more or less reciprocal presupposition:

1. That the minimum requirements of the whole programme, as well as the yearly divisions thereof, are well within the capacity of elementary school children.
2. That an aligned advance in all subjects of a grade may readily be maintained throughout the year, the pupils progressing from Form to Form by annual promotion, and finally graduating with an approximately uniform standing in all studies.

One might compare movement throughout a Form to a battle advance from trench to trench over a wide front, where each of some forty company commanders, under the watchful eye of a general, is required to keep not only the men of his command in line, but likewise the company as a whole abreast with other companies on the right and left.

While the system, considered in its entirety, handles with remarkable efficiency the great mass of elementary school children throughout the province, it would be a more than human organization were it not to come in contact with exceptional situations. It is to deal with such exceptional needs that auxiliary classes were established.

The retardation, repetition of grades, and irregularity in achievement profile so characteristic of the school history of direct learning children, might be figuratively represented in the battlefield comparison instanced above by two eventualities. A company as a whole might be held up and forced to fall back upon the succeeding wave, or a company might become so broken and straggling as to render hopeless its further participation in the general advance.

Candidates eligible for admission to auxiliary training classes having demonstrably failed to fit in with a horizontal system of classification and promotion, another type of school organization and advancement would seem to be required. Moreover, the prime need for aligned proficiency vanishes when it is considered that only in rare and special instances does a member of an auxiliary training class become a candidate at the High School Entrance Examination. Experience has likewise shown that a pupil's learning ability may vary greatly from subject to subject, and that two pupils having identical intelligence quotients may have widely differing capacities for advancement in any particular study. The one may be fairly proficient in reading, but decidedly deficient in arithmetic. The other may be the reverse. For these and other reasons the usual horizontal system of classification and promotion by grades has been superseded by a vertical system of classification and promotion by subjects, so that the pupil may fit into harness at all points, make the maximum possible progress along the line of his proficiencies, and receive the maximum possible assistance along the line of his deficiencies.

This vertical organization may be attained either by individual instruction or subject-group classification. Individual instruction, though superior in auxiliary classes to grade organization, has certain inherent defects which become apparent wherever it has been extensively practised:

1. Lack of that enthusiasm engendered by class co-operation and competition.
2. Diminished social training.
3. Limited academic progress owing to limited direct teaching.
4. Excessive requirements in the way of seat-work devices and material.
5. Increased demands upon the teacher's time and energy.

6. Inability of auxiliary training-class pupils to initiate activity and maintain attention along academic lines.

These criticisms are, however, much more applicable to the use of individual instruction in academic than in manual work.

The subject-group method of organization avoids to a large extent the defects of the individual plan, and is more satisfactory alike to teachers and parents, as indicating definitely and specifically the progress being made by members of the class. The syllabus of each subject on the programme has been divided into 6 successive sections, and provision is made for classifying pupils into 6 or fewer corresponding groups in each department of the work. In general, group 1 corresponds with kindergarten primary, 2 with Jr. I, 3 with Sr. I, 4 with II, 5 with Jr. III and 6 with Sr. III. In Table B, page 63 is given the actual classification of a very successfully-conducted mixed auxiliary training class, the enrolment of which is outlined in Table A. Tables A and B are to be regarded merely as statements of fact, and not in any sense as an attempt to explain this or that particular placement.

TABLE A

| Name | Sex | Age | I.Q. | Alertness | Stability | Remarks |
|---|---|---|---|---|---|---|
| A | B | 13- 9 | 52 | − − | − + | Practically uneducable; no trouble. |
| B | G | 8- 1 | 76 | + + | − − | Placed for readjustment to grade. |
| C | B | 10- 6 | 70 | + − | + − | |
| D | B | 11- 4 | 72 | + − | + + | Defective speech. |
| E | B | 12- 3 | 59 | − − | + + | |
| F | B | 9- 7 | 71 | + + | − + | |
| G | G | 12- 9 | 68 | + − | + − | Defective speech. |
| H | B | 13- 4 | 66 | − − | + − | |
| I | G | 13- 6 | 80 | + + | − − | Recently placed for readjustment; social problem. |
| J | G | 11- 5 | 74 | + + | + + | Defective vision. |
| K | G | 14-10 | 69 | + − | + − | |
| L | B | 13- 4 | 70 | − − | − − | Should be re-tested for retrogression. |
| M | B | 15- 4 | 64 | − + | − − | Social problem; in with a gang. |
| N | B | 14- 1 | 71 | − − | + − | Partly deaf. |
| O | G | 13- 0 | 73 | + + | + + | May be readjusted to grade. |
| P | B | 15- 7 | 70 | + − | + − | |

## TABLE B

| Group | Reading | Writing | Spelling | Arithmetic | Composition | Geography | History | Drawing | Music | Hygiene |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | AB | A | AB | A | AB |  |  | A |  |  |
| 2 | CDEF | B | CDEFI |  |  | ABCDEFH | ABCDEFGH |  |  | ABCDEFH |
| 3 |  | CDFILM |  | BCDEFGH | CDEFGH |  |  | BCDEFL |  |  |
| 4 | GHJM | GHJKP | GHJLMN | MLO | JKLMN |  |  | GHIJKLNP |  |  |
| 5 | KLNP | EN | KOP | IJKNP | IOP | GIJKLMNOP | IJKLMNOP | MO |  | GIJKLMNOP |
| 6 | IO | O |  |  |  |  |  |  |  |  |

| Group | Woodwork | Metalwork | Craftwork | Needlework | Housework | Diligence | Promptitude | Courtesy | Trustworthiness | Neatness |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 |  |  | B | B | B | BI | BI |  | BI | B |
| 2 | CDF |  |  |  |  | CF | CFM | BC | FLM | CF |
| 3 |  | HLMN | ACDEFGJ | GJ | AGJ | ALM | L | AFHLM | D | ADLM |
| 4 | EHLMN |  | HL |  |  | DEGHJ | ADEDHJ | DEGJK | AEGHK | EGHJ |
| 5 | P | P | IKMNO | IKO | IKO | KN | KN | NI | KN | IKN |
| 6 |  |  | P |  |  | OP | OP | OP | OP | OP |

To assist the teacher in the matter of recording classifications and promotions, an auxiliary training class record sheet has been made out on the back of Form A.C.4. Specimen entries in the case of a boy who was admitted to a class at the age of 12 years 9 months unable to read is given on page 65. When a pupil moves to another centre, is transferred to another auxiliary training class in the same centre, or is promoted to a senior class or school, Form A.C. 4 accompanies him, and enables the principal and teacher of the second school to properly place the incoming pupil with a minimum expenditure of time and experimentation.

New departures in education are fruitful sources of misunderstanding. In order that a happy spirit of co-operation between school and home may exist, it is vitally necessary that parents be assured their children are making successful progress in auxiliary training classes. To that end the Department furnishes each class with a supply of individual monthly report cards specifically adapted to the special courses therein pursued. Monthly or bi-monthly (according to the general practice of the school in which the class is located) the pupil's standing in the several subjects of the programme should be indicated on the left-hand inside page, either by percentages or comparative adjectives, and the report forwarded for the parent or guardian's consideration and signature. On the right-hand inside page a report of all the pupil's classifications and promotions while a member of the auxiliary class should be shown, as duplicated from the inside page of Form A.C. 4. (See pages 66 and 67.)

In connection with classification and promotion in auxiliary training classes, the following items might be noticed:

1. Classifications and promotions in the several departments of Business Habits and Manual Work and in Writing and Drawing are largely matters of book-keeping based on the pupil's individual accomplishments.

2. A well-defined grouping for recitation purposes should be maintained in Reading, Spelling, Arithmetic, and perhaps Composition. Rarely however, will all six groups in any one department be represented in mixed auxiliary training classes.

## ONTARIO DEPARTMENT OF EDUCATION
## AUXILIARY CLASS RECORD

Admitted *Sept., 1928*..............School *Dalton*.............City, Town or S.S. *Crossley*...................
Transferred *Sept., 1930*..........School *Maxwell*..........City, Town or S.S. *Crossley*...................
Transferred.................................School..........................City, Town or S.S.......................................
Left School *June, 1931*..........Occupation *Delivery Boy, Smith Bros*.........................................

Classification and Promotion Dates

| ACADEMIC (a) | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 |
|---|---|---|---|---|---|---|
| Reading | *Sept./28* | *Dec./28* | *June/29* | *June/30* | *June/31* | |
| Writing | *Sept./28* | *April/29* | *May/30* | *Jan./31* | | |
| Spelling | *Sept./28* | *Dec./28* | *June/29* | *June/30* | | |
| Arithmetic | | | *Sept./28* | *June/29* | *June/30* | *Feb./31* |
| ACADEMIC (b) | Groups 1 and 2 | | Groups 3 and 4 | | Groups 5 and 6 | |
| Composition and Address | *Sept./28* | *Dec./28* | *June/29* | *June/30* | *June/31* | |
| Geography and Nature Study | | | *Sept./28* | *June/29* | *June/30* | *June/31* |
| History and Civics | | | *Sept./28* | *June/29* | *June/30* | *June/31* |
| Drawing | | | *Sept./28* | *June/29* | *Dec./30* | |
| Music | | | | | | |
| Health Education | | | *Sept./28* | *June/29* | *June/30* | *June/31* |
| CRAFT | | | | | | |
| Woodwork | *Sept./28* | *Oct./28* | *Dec./28* | *Dec./29* | *Oct./30* | |
| Reedwork | *Jan./29* | *April/29* | *April/30* | *April/31* | | |
| Metalwork | | | | | | |
| Leatherwork | *April/29* | *June/29* | *June/30* | *June/31* | | |
| Sewing | | | | | | |
| Knitting | | | | | | |
| Weaving | | | | | | |
| Cooking | | | | | | |
| Laundry | | | | | | |
| Housework | | | | | | |
| BUSINESS HABITS | | | | | | |
| Diligence | *Sept./28* | *Dec./28* | *June/29* | *Feb./30* | *Oct./30* | *May/31* |
| Promptitude | *Sept./28* | *Dec./28* | *June/29* | *Dec./29* | *June/30* | *Dec./30* |
| Courtesy and Co-operation | *Sept./28* | *May/29* | *Dec./29* | *June/30* | *April/31* | |
| Trustworthiness | *Sept./28* | *June/29* | *April/30* | *Dec./30* | *May/31* | |
| Neatness | *Sept./28* | *June/29* | *Feb./30* | *Dec./30* | | |

REMARKS: *Dec./28. A hard-working boy when interested; inclined to be careless and untidy; subject to spells of contrariness.*

*Dec./29. Responds to praise; is willing to assume responsibilities; but inclined to be individualistic, bossy and non-co-operative in relation to his fellow students.*

*Dec./30. Would seem best fitted for some individualistic occupation requiring promptitude and diligence.*

The December, 1930, report card of the pupil mentioned on page 65 is shown below:

PUPIL'S

| | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June |
|---|---|---|---|---|---|---|---|---|---|---|
| Reading | *62* | *64* | *70* | *68* | | | | | | |
| Writing | *54* | *57* | *60* | *61* | | | | | | |
| Spelling | *61* | *53* | *62* | *64* | | | | | | |
| Arithmetic | *70* | *73* | *79* | *82* | | | | | | |
| Composition and Address | *53* | *41* | *64* | *66* | | | | | | |
| Geography and Nature Study | *71* | *70* | *75* | *74* | | | | | | |
| History and Civics | *60* | *60* | *71* | *70* | | | | | | |
| Drawing | *62* | *41* | *65* | *66* | | | | | | |
| Music | F | F | F | F | | | | | | |
| Hygiene | *63* | *66* | *70* | *68* | | | | | | |
| Woodwork | *81* | *74* | *85* | *82* | | | | | | |
| Metalwork | | | | | | | | | | |
| Craftwork | | | | | | | | | | |
| Needlework | | | | | | | | | | |
| Housework | | | | | | | | | | |
| Diligence | E | E | E | E | | | | | | |
| Promptitude | E | G | E | E | | | | | | |
| Courtesy and Co-operation | F | G | P | F | | | | | | |
| Trustworthiness | F | F | G | G | | | | | | |
| Neatness | F | G | F | G | | | | | | |
| Days Absent | 0 | 0 | 0 | 0 | | | | | | |
| Times Late | 0 | 1 | 0 | 0 | | | | | | |
| PARENT'S SIGNATURE → | *Mrs. A. Smith* | *Mrs. A. Smith* | *Mrs. A. Smith* | | | | | | | |

## REPORT

### Classification and Promotion Dates

| Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 |
|---|---|---|---|---|---|
| *Sept./28* | *Dec./28* | *June/29* | *June/30* | | |
| *Sept./28* | *April/29* | *May/30* | | | |
| *Sept./28* | *Dec./28* | *June/29* | *June/30* | | |
| | | *Sept./28* | *June/29* | *June/30* | |
| *Sept./28* | *Dec./28* | *June/29* | *June/30* | | |
| | | *Sept./28* | *June/29* | *June/30* | |
| | | *Sept./28* | *June/29* | *June/30* | |
| | | *Sept./28* | *June/29* | *Dec./30* | |
| | | | | | |
| | | *Sept./28* | *June/29* | *June/30* | |
| *Sept./28* | *Oct./28* | *Dec./28* | *Dec./29* | *Oct./30* | |
| | | | | | |
| *April/29* | *June/29* | *June/30* | | | |
| | | | | | |
| | | | | | |
| *Sept./28* | *Dec./28* | *June/29* | *Feb./30* | *Oct./30* | |
| *Sept./28* | *Dec./28* | *June/29* | *Dec./29* | *June/30* | *Dec./30* |
| *Sept./28* | *May/29* | *Dec./29* | *June/30* | | |
| *Sept./28* | *June/29* | *April/30* | *Dec./30* | | |
| *Sept./28* | *June/29* | *Feb./30* | *Dec./30* | | |

Parents will please note the pupil's progress as indicated by ratings and promotions, sign the report and see that it is promptly returned.

Rate of Progress

Excellent - - E
Good - - - G
Fair - - - F
Poor - - - P

The work of junior auxiliary classes will, as a rule, be confined to the first four or at most five groups in any department.

3. History, Geography, and Health have been placed on the programme largely with the view of developing interests, attitudes, and habits, rather than for the purpose of imparting information. In mixed auxiliary training classes, not more than three, and in junior auxiliary training classes, not more than two groups in any of the three departments should find a place on the time-table.

4. Promotion in a department may occur at any time throughout the school year. Advantage should be taken of this opportunity: (1) to advance all pupils at their maximum possibilities of progress, (2) to level up the weak subjects of pupils placed in the class for the purpose of readjustment to the work of the regular grades.

5. Among the twenty subjects on the programme every pupil should gain at least several promotions during the school year. Usually, as a result of grade experience his confidence has been more or less shattered—a hardship which all must undergo in the process of appreciating their limitations, and probably best suffered during the unembittering years of early childhood. To restore confidence within his sphere of possibilities, nothing will help better than the encouragement of success as evidenced by promotion. To this end it is wise—

(1) To undergroup rather than overgroup pupils when first they enter the class.

(2) To make every promotion a red-letter day in the child's life.

(3) To conform to the public regard for examinations by appearing at least to use them in making promotion, though the wise teacher will always be guided by her judgment on the whole situation in determining advancement.

6. Certain faults occasionally exhibited by teachers of small ungraded schools should be avoided:

(1) The tendency to overmagnify slight differences in achievement, and so drift into a system of individual instruction.

(2) The tendency to over-frequently combine contiguous

groups in Reading, Arithmetic, and Spelling, and so retard the progress of the more proficient pupils.

(3) The tendency to spend too much time dealing with the class as a whole.

With no fixed programme to be covered within a time limit, there is always danger of over-prolonging opening exercises, inspections, games, general talks, class readings, etc.

Since many of the pupils in senior auxiliary schools and classes come from junior auxiliary training classes, it has been considered wise to change somewhat the nomenclature of classification with respect to these institutions for the following reasons:

1. To create an atmosphere conducive to the development of self-respect among adolescent pupils.
2. To extend and broaden the upper limits of the programme.
3. To avoid any unpleasantness which might arise in connection with the re-classification of entering pupils.

The minimum age of boys entering these schools is thirteen, and of girls, on account of earlier adolescence, twelve. Hence the normal course extends over a period of from three to four years. Nevertheless, because of the wide diversity of attainments among entrants, and because many come directly from the grades without having enjoyed the advantages of auxiliary training class education, it has been found well to divide the general programme into six successive sections known as Lower School 1 and 2, Middle School 1 and 2, Upper School 1 and 2. In a general way L. 1 and 2 correspond with Forms I and II of the Public and Separate School Course, and M. 1 and 2 with Form III, and U. 1 and 2 with a modified Form IV. Since, however, among senior pupils stress is shifted from academic to occupational skill, and from the inculcation of elementary social habits and attitudes to the building up of a purposeful personality; since in large schools grade classification and promotion must be resumed to some extent, and since, moreover, there will be little or no transference from one to another school of this type, it has been thought wise to give teachers and principals very considerable latitude in adapting the courses to suit the exigencies of their particular situations. Among adolescent classes Form A.C. 8 is used in place of Form A.C. 4 to record progress. Also a special monthly report card has been issued for their use.

In the construction of a time-table, teachers in both graded and ungraded schools are guided to a large extent by—(1) the course of study, (2) the requirements of annual promotion examinations, (3) certain currently accepted practices, the outcome of trial and error experimentation over a number of years. The auxiliary class teacher has no such guidance. The make-up of her class, the varying nature of its enrolment from year to year, and the presence of certain cases requiring special attention render impossible the use of a standardized time-table. She is compelled to fall back upon a consideration of the ends and purposes of education, its fundamental principles, and the relative values of its means and processes. There must likewise be taken into account various expediencies relevant to her co-operative relations with parents, principals, and the community at large. For instance, she might say to herself:

"Inability to read and write coupled with the consciousness of social inferiority arising from a want of such accomplishments constitutes perhaps the greatest handicap under which a pupil leaving school may suffer. Children most readily acquire academic skills during pre-adolescent years and manual skills during adolescence. Moreover parents—and particularly the parents of children in my class—are prone to judge the progress of pupils and the success of a school by generally accepted standards. Therefore, among juniors a large proportion of the school time should be devoted to the teaching of academic subjects.

"On the other hand practically all these children have entered the class dispirited and conditioned away from school as a result of grade experience. Most, though not all, work better along lines of hand skill than tongue skill. Hence a certain amount of manual work should appear on the programme for juniors, in order that confidence may be re-established and a liking for school regained through success in such activity. Seniors, who have become fairly proficient in elementary academic skills, should devote a much larger proportion of time to manual work, since the development of occupational skills, the inculcation of business habits and attitudes, and the building up of a well-integrated personality now become the main purpose of education."

Or she might say:

"John Smith is twelve years old, has an I.Q. of 79, can do Junior Third Arithmetic, writes and draws fairly well, but can neither read nor spell. I must try to manage a certain number of 'in between' classes for his benefit, to bring his reading and spelling up to par, in which case he may be returned to grade."

Certain formulae, however, which make for efficiency in rural ungraded schools are more or less applicable to auxiliary classes:

1. Junior pupils require a larger number of recitation exercises than seniors.
2. Frequent short, snappy recitations are more effective than less frequent, but more prolonged periods.
3. Recitations should deal largely with new presentations, seat-work with their drill and application.
4. General talks and lessons directed to the whole school because of their widely scattered targets are—save in the possible case of one or two subjects—the least effective way of presenting material.

The following time-table is submitted as a suggestion. Special modifications will have to be made to meet the needs of each particular class. In the majority of junior training classes, provision will have to be made for the first four groups only. In the usual mixed training class, certain groups in each of the several departments will not be represented. Adjustments may be made by extending the lengths of recitation periods to correspond with the needs of larger numbers in the remaining groups. Among training class pupils there is but little transfer from formal writing exercises to penmanship skill. Writing, and to a large extent, spelling, can best be taught direct-learning pupils by insistence upon neatness and accuracy in all workbook and blackboard exercises. Additional opportunity for manual work among senior pupils may be secured by substituting this activity for one or two of the reading or arithmetic periods (according to the proficiency of the pupils).

TIME-TABLE FOR MIXED AUXILIARY TRAINING CLASSES

| TIME | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---|---|---|---|---|---|
| 9.00- 9.10 | Opening Exer. | Opening Exer. | Opening Exer. | Opening Exer. | Opening Exer. |
| 9.10- 9.20 | Arithmetic I | Geog. I & II and III & IV Nature Study V & VI | Arithmetic I | Arithmetic I | Arithmetic I |
| 9.20- 9.30 | Arithmetic II | | Arithmetic II | Arithmetic II | Arithmetic II |
| 9.30- 9.40 | Arithmetic III | | Arithmetic III | Arithmetic III | Arithmetic III |
| 9.40- 9.50 | Arithmetic IV | | Arithmetic IV | Arithmetic IV | Arithmetic IV |
| 9.50-10.00 | Arithmetic V | | Arithmetic V | Arithmetic V | Arithmetic V |
| 10.00-10.10 | Arithmetic VI | Writing (Sch.) | Arithmetic VI | Arithmetic VI | Arithmetic VI |
| 10.10-10.15 | P.T. (Sch.) | Comp. I & II | P.T. (Sch.) | Comp. I & II | P.T. (Sch.) |
| 10.15-10.30 | History I & II | Comp. III & IV | Hist. III & IV | Comp. III & IV | Hist. & Civ. V & VI |
| 10.30-10.45 | Music (Sch.) | Hygiene (Jr.) | Music (Sch.) | Hygiene (Sr.) | Music (Sch.) |
| 10.45-11.00 | Recess | Recess | Recess | Recess | Recess |
| 11.00-11.05 | New Word I | New Word I | New Word I | New Word I | New Word I |
| 11.05-11.15 | Phonics II | New Word II | Phonics II | New Word II | Phonics II |
| 11.15-11.30 | Spelling III, IV, V, VI | Comp. V & VI | Spelling III, IV, V, VI | Comp V & VI | Spelling III, IV, V, VI |
| 11.30-12.00 | Craft (School) | Art (School) | Craft (School) | Art (School) | Craft (School) |
| 12.00- 1.30 | Noon | Noon | Noon | Noon | Noon |
| 1.30- 1.40 | Teacher Reads Story or Discusses Current Events. | | | | |
| 1.40- 1.50 | Reading I | Reading I | Reading I | Reading I | Geog. I & II and III & IV Nature Study V & VI |
| 1.50-2.00 | Reading II | Reading II | Reading II | Reading II | |
| 2.00- 2.10 | Reading III | Reading III | Reading III | Reading III | |
| 2.10- 2.20 | Reading IV | Reading IV | Reading IV | Reading IV | |
| 2.20- 2.30 | Reading V | Reading V | Reading V | Reading V | |
| 2.30- 2.40 | Reading VI | Reading VI | Reading VI | Reading VI | Business Habits (School) |
| 2.40- 2.45 | Word Drill I and II | Word Drill I and II | Word Drill I and II | Word Drill I and II | |
| 2.45- 3.00 | Recess | Recess | Recess | Recess | Recess |
| 3.00- 4.00 | Craft (School) | Craft (School) | Craft (School) | Craft (School) | Craft (School) |

BOYS' PROMOTION CLASS

| TIME | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---|---|---|---|---|---|
| 9.00- 9.10 | Opening Exer. | Opening Exer. | Opening Exer. | Opening Exer. | Opening Exer. |
| 9.10- 9.30 | Arith. L. 1, 2 | Reading L. 1, 2 | Arith. L. 1, 2 | Reading L. 1 2 | Arith. L. 1, 2 |
| 9.30- 9.50 | Arith. M. 1, 2 | Reading M. 1, 2 | Arith. M. 1, 2 | Reading M. 1, 2 | Arith. M. 1, 2 |
| 9.50-10.10 | Arith. U. 1, 2 | Reading U. 1, 2 | Arith. U. 1, 2 | Reading U. 1, 2 | Arith. U. 1, 2 |
| 10.10-10.20 | Music (school) | P.T. (School) | Music (School) | P.T. (School) | Music (School) |
| 10.20-10.32 | Geography L. | History L. | Geography L. | History L. | Hygiene L. |
| 10.32-10.45 | Geog. M. & U. | Hist. M. & U. | Geog. M. & U. | Hist. M. & U. | Hyg. M. & U. |
| 10.45-11.00 | Recess | Recess | Recess | Recess | Recess |
| 11.00-11.10 | Comp. M. & U. | Comp. L. | Comp. M. & U. | Comp. L. | Oral |
| 11.10-11.20 | Spelling L. | Spell. M. & U. | Spelling L. | Spell. M. & U. | Comp. (Sch.) |
| 11.20-11.40<br>11.40-12.00 | Reading L. 1, 2<br>Reading M. 1, 2 | Science M.&U.<br>Art; L. | Science L.<br>Art M. & U. | Science M.&U.<br>Art; L. | Business and Voc. Guid. |
| Noon | Noon | Noon | Noon | Noon | Noon |
| 1.30- 3.30 | Special U.<br>Woodwork M.<br>Reedwork L. | Special U.<br>Reedwork M.<br>Woodwork L. | Special U.<br>Woodwork M.<br>Reedwork L. | Special U.<br>Reedwork M.<br>Woodwork L. | Drafting and Typewriting L. M. U. |

Metal work, leather work, etc., substituted for woodwork and reedwork during other seasons of the year.

Middle and Upper School courses in history, geography, science, composition, hygiene and spelling are taken in alternate years.

Undue segregation tends to stigmatize a class and to limit those social contacts with other pupils which form such a valuable, not to say such an essential feature, of normal education. The welfare alike of pupil and school demands that auxiliary class children be removed from regular grades and placed in special rooms. This divorcement from ordinary study competition and contact necessarily creates an artificial social environment, which should not be over-intensified by denying these children associations with their fellows along lines in which all may participate. For this reason, it is desirable that auxiliary classes take part in routine school activities—assembly, recess, etc.; participate in sports, drills, concerts, and other school affairs, and that where possible they enjoy with other boys and girls the service rendered by special instructors in music, physical training, etc.

School discipline is not maintained solely for the purpose of creating an atmosphere favourable to class instruction. It also performs an important function in the training programme, being the chief instrument whereby self-control is established and social and business habits inculcated. This educative aspect of school discipline is sometimes overlooked by teachers of small classes. There is a tendency to permit certain laxities of behaviour which could not and would not be tolerated among larger groups.

Children entering auxiliary training classes are frequently characterized by a lack of self-control, the result largely of unfortunate experiences. Moreover the majority on graduation seek forms of employment and enter positions of service where habits of diligence, promptitude, neatness, etc., are qualities most appreciated by employers and most demanded of employees. Since any excellencies possessed by direct-learning pupils lie along lines of habit formation, and since proficiency in habit attainments must constitute their only advantage in a competitive economic world, effective school discipline becomes a matter of greatest importance in training classes.

In this connection the following suggestions are offered:

1. Ordinary routine procedures of classroom administration should be carried out with even greater exactitude than in regular grades.

2. Sympathy, patience, but most of all, insistence, should characterize the teacher's attitude toward direct-learning pupils, who readily respond to kindness and firmness, but who are likely to turn stubborn in the face of impatience and to become unruly under vacillating government.

3. In effecting control, positive incentives—smiles, praise, stars, buttons, positions of leadership, etc.—should be used in preference to negative incentives—blame, restriction, punishment. Nevertheless, the teacher should not hesitate to use punishment where more kindly methods prove unavailing.

4. In the matter of looking after cupboards, tools, plants, supplies, library books, work tables, work benches, and exhibits; of keeping clean the sink, blackboard, and floor; of captaining the lines, etc.; the teacher should have an ordered system of assigning responsibilities, and should see that merit in the performance thereof is fully recognized.

5. Direct-learning pupils cannot continue to attend to seat work (especially that of an academic nature) over prolonged periods. Assigned exercises should not be too lengthy. The teacher should provide supplementary reading material, interesting seat-work devices, or craft-work activities, arranged on shelves or in pigeon holes for the various groups, and condition pupils to supply themselves quietly with other activities when their assigned seat-work is finished.

## CHAPTER IV

# COURSES OF STUDY

OWING to extreme variability among auxiliary class pupils, together with the necessity of maintaining intact the liberty of the teacher to initiate, create, and devise, any course of study for direct-learning children must be flexible and adjustable. In auxiliary training classes, even more than in regular grades, the dominant end of education as a training of children rather than a teaching of subjects should ever be kept in view. Subjects are but tools which the special teacher uses to develop skill and character. The good workman must be privileged to choose and change his instruments as occasion demands.

On the other hand, a general programme may serve—

1. To afford guidance to teachers who have newly entered the work.
2. To acquaint inspectors, principals, and parents with the aim and purpose of auxiliary training classes.
3. To expedite the classification of transferred pupils.
4. To embody and preserve for use many procedures experimentally established by successful teachers throughout the Province.
5. To articulate more intimately auxiliary classes with other educational services.

The programme outlined in this Chapter, while suggestive rather than regulative, is a composite picture of what is now being accomplished by a great number of successful classes throughout the Province.

## READING

### *Group I*

Word, phrase, and sentence recognition.

Reading brief blackboard stories characterized by repetitive structure and content.

The first 40 pages of the Ontario Primer.

### *Group II*

Reading from the blackboard, the Ontario Primer, other primers, and corresponding supplementary reading sets.

Elementary sounds and sound families.

Memorization of short poems.

Silent reading of directions requiring responses in the form of movements, placement of objects, drawing, colouring, etc.

### *Group III*

Reading from the First Book and corresponding supplementary reader sets.

The study of more difficult sound combinations and families.

Memorization of short poems.

Silent reading of directions requiring constructive response in drawings, paper, cardboard, plasticine, and sand-table work.

### *Group IV*

Oral and silent reading from the Second Book and corresponding supplementary reader sets.

Memorization of poetry.

Silent reading of directions and descriptions to which responses may be made in the form of drawings, paper, cardboard, plasticine, sand-table or wood work.

### *Group V*

Oral and silent reading from sets of supplementary readers coresponding in difficulty with the easier portions of the Third Reader.

Contact established with the school and the public library.

Training in the use of the dictionary.

Reading arithmetic problems, manual training directions, etc.

### *Group VI*

Oral and silent reading from sets of supplementary readers corresponding in difficulty with the Third or Fourth Book.

Oral and silent reading of some standard novel.

Regular use of the school and the public library.

Oral and silent reading of newspaper and magazine articles.

Regular use of the dictionary.

NOTE—*The Canadian Readers* and *The Silent Study Readers* are Canadian publications which can be recommended as suitable supplementary reading sets—Book I for Group 3; Book II, Group 4; Book III, Group 5; Book IV, Group 6.

### WRITING

Only the very exceptional auxiliary training class pupil will ever occupy a position requiring highly developed skill in the art of handwriting. Movement exercises have little or no transference value in the case of direct-learning children. The chief aim of the teacher will be to produce neat, legible writers. This is best accomplished by constant supervision of the children's work at the blackboard and in their exercise books.

#### *Group I*

Form of small letters and numerals—triple ordinary size.

"Overcoating" words at the blackboard and in exercise books.

Transcription of words, numerals, and simple sentences.

#### *Group II*

Form of capitals, small letters, and numerals—double ordinary size.

Transcription and free writing of words and sentences at the blackboard and in exercise books.

Relative heights and alignment of letters in words.

#### *Group III*

Ordinary size writing.

Words and numerals from dictation.

Proper spacing.

#### *Group IV*

Writing sentences from dictation.

Transcription from printed copy.

Proper spacing and parallelism.

### *Group V*

Adjusting size to varied space requirements; filling in business forms; making out memoranda, menu cards, etc.

### *Group VI*

Writing in varied positions and on varied supports; telephone pad in the hand, against the wall, etc.; taking store orders, dinner orders, etc.

Not how one *can* write but how one *does* write should form the basis of judgment in classifying pupils. Promotions should be made according to progress in neatness and legibility as evidenced by the writing in the pupils' work and exercise books. There are a number of schools in the Province where the work books from the auxiliary training class compare favourably in this respect with those from any other grade in the school. A satisfactory method of making promotion which forms at the same time a strong incentive toward improvement, consists in fixing to the wall one of the several writing scales in ordinary use and allowing the pupil to determine his own promotion fitness.

Group II, 30%; Group III, 40%; Group IV, 60%; Group V, 80%; Group VI, 90% as specified in the *Thorndike Writing Scale* are suggested as attainment standards for the several groups named.

## SPELLING

The speaking and to a greater extent the writing vocabularies of direct-learning children are largely confined to specific and concrete, in contradistinction with general and abstract words. Verbs of action, names of objects, adjectives of colour, size and shape, together with a number of words denoting emotion, make up their repertoire. Failure to understand the significance of words, rather than inability to learn their spelling, constitutes the chief handicap of auxiliary training class pupils in this subject.

Teachers should make out lists selected from the *Public School Speller* and elsewhere of words suitable for the several groups and organize these: (1) into sound families, for example, "ark" family, (2) under common headings, for example, vegetables, furniture, games, what dogs do, what farmers do, etc.

### *Group II*

125 words, Form I, Junior Grade, *Public School Speller.*

### *Group III*

200 selected, Form I, Senior Grade, *Public School Speller.*

### *Group IV*

400 selected words, Form I, Senior Grade and Form II, *Public School Speller.*

### *Group V*

450 selected words, Form II, *Public School Speller*, and words connected with occupational activities.

### *Group VI*

550 selected words, Forms II and III, *Public School Speller*, and words connected with occupational activities.

The following are recommended as helps to the teacher in making out spelling lists for the several groups.

*The Canadian Speller*, Book I, by F. M. Quance. W. J. Gage & Co.

*Every-Day Words.* Clarke, Irwin & Co.

*Programme of Academic Instruction*, Ontario Hospital, Orillia,

## COMPOSITION

Purpose—to increase the child's speaking and writing vocabulary, train him to express ideas in words, use good English, speak distinctly, and carry himself with ease and address when speaking.

### *Groups I and II*

Oral—Talks about pets, toys, games, events, Thanksgiving, Christmas, Easter.

Reproduction stories.

Picture-study stories.

Drills and games on the correct use of is, are; was, were; did, done; saw, seen; went, gone; come, came.

*Written*—Transcription of verse and blackboard reading stories.

Use of capitals in proper names.

Use of capital and period at the beginning and the end of a sentence.

Recomposition on the blackboard by pupil and teacher of reproduction and picture-study stories in sentence-a-line structure; transcription of same by pupils.

### *Groups III and IV*

*Oral*—Talks as in section 1, including St. Valentine's Day, Arbor Day, Victoria Day, Dominion Day.

Reproduction and picture-study stories.

Reproductions based on history, geography, and reading lessons.

Drills and games on the correct use of knew, known; threw, thrown; wrote, written; tore, torn; froze, frozen; don't, doesn't.

*Written*—Transcription of blackboard recompositions of reproduction and picture-study stories.

Changing sentence-a-line structure to paragraph structure.

Use of interrogation and quotation marks.

Use of capitals in headings and titles, and of periods with initials and abbreviations. Notes to Santa Claus, teacher, parent, fellow-pupil.

Addressing envelopes.

Short written stories.

### *Groups V and VI*

*Oral*—Picture-study stories.

Reproductions based on history, geography, and reading lessons.

Dramatization practices of business procedure: making application for a situation, using telephone and telephone book, serving a customer, making a purchase, receiving a caller, conversing with a banker, and other specific exercises to provide training in courtesy, address, clear, direct speech, and business behaviour.

The correct use of can, may; lie, lay; rise, raise; sit, set; teach, learn; think, guess; burst; drown, drowned.

*Written*—Business letters—application for a situation; order for goods; letters of inquiry; letters of explanation, etc.

Friendly letters.

Individual picture-study stories.

Business forms taught in connection with dramatized business situations: bills and accounts, receipt, check, deposit slip, draft, time sheet, expense account, personal budget, household budget, promissory note (with a warning as to the necessity of consulting a banker before accepting or giving).

### Arithmetic

#### *Group I*

Counting objects, sounds, and movements to 10.

Recognition of number pictures to 10.

Reading and writing number symbols to 10.

The following combinations to be taught and drilled: (1) as individual facts, (2) in the order set forth, (3) in the inverted as well as the given form.

Objective and practical problem situations should be constantly associated with symbolic representations. The placing of addition answers at the top will simplify and expedite the subsequent teaching of subtraction.

$$\begin{array}{cccccccccccccccccccccccc} \overline{1} & \overline{2} & \overline{3} & \overline{4} & \overline{5} & \overline{1} & \overline{3} & \overline{1} & \overline{2} & \overline{1} & \overline{4} & \overline{6} & \overline{3} & \overline{5} & \overline{1} & \overline{5} & \overline{2} & \overline{8} & \overline{5} & \overline{3} & \overline{7} & \overline{1} & \overline{7} & \overline{2} & \overline{6} \\ 1 & 2 & 3 & 4 & 5 & 2 & 1 & 4 & 3 & 5 & 2 & 1 & 4 & 2 & 7 & 3 & 6 & 1 & 4 & 6 & 2 & 9 & 3 & 8 & 4 \end{array}$$

Addition of several digits summating 10.

Recognition of cent, nickel, dime, quarter, half-dollar, dollar bill.

#### *Group II*

Counting to 100.

Reading and writing symbols to 100.

Counting by 10's, 5's, and 2's, to 100.

Extension table exercises, both blackboard and mental, on the combinations of Group I.

Single column addition involving these extensions and associated with exercises involving practical problem situations.

The remaining combinations taught as outlined in Group I.

$\overline{6}\ \overline{7}\ \overline{8}\ \overline{9}\ \overline{2}\ \overline{7}\ \overline{5}\ \overline{8}\ \overline{3}\ \overline{8}\ \overline{5}\ \overline{9}\ \overline{5}\ \overline{7}\ \overline{5}\ \overline{6}\ \overline{9}\ \overline{7}\ \overline{9}\ \overline{8}$
6 7 8 9 9 4 6 3 9 4 7 4 8 6 9 8 6 8 7 9

Extension table exercises, single column additions and practical problem situations involving all combinations.

Making change—nickel, dime, quarter; store play.

Subtraction drills and problems to 18, taught by the additive method as a lower digit completion of addition combinations.

Double column addition.

Subtraction of two place numbers, additive method.

### *Group III*

Reading and writing symbols to 1,000.

Use of decimal point in dollars and cents.

Addition and subtraction of three place numbers.

Store play and making change up to $5.00.

Inch, foot, and yard measurements.

The following multiplication combinations taught and drilled: (1) as individual facts, (2) in the order set forth, (3) in the inverted as well as the given form, (4) associated with practical problem situations.

2 3 4 5 2 5 4 2 4 2 7 2 9 3 6 3 8 4
2 3 4 5 5 3 5 3 2 6 2 8 2 4 3 7 3 6

Store play and problems involving multiplication products to 25, addition, and subtraction.

Telling time, hours, and half hours.

Roman numerals to 50.

Pint, quart, gallon measures.

Multiplication by 10.

Quart, peck, bushel measures.

### *Group IV*

Multiplication of two and three place numbers by one digit.

The remaining multiplication combinations taught as outlined above.

6 7 8 9 5 7 5 9 3 7 4 9 6 8 6 8 7 9
6 7 8 9 6 5 8 5 9 4 8 4 7 6 9 7 9 8

Multiplication of two, three, and four place numbers by two and three place numbers.

Telling time by minutes.

Multiplication by 11 and 100.

Cost accounting, store bills, marketing, wage sheets, room furnishings, dress materials, etc.

½, ¼, ⅓, ideas and practical applications thereof.

Ounce, pound, hundredweight, ton.

Square inch, square foot, and square yard measures taught by using area units.

Estimating areas of various surfaces.

Short method of calculating area of rectangles.

### *Group V*

Division by one digit, dividend up to 81, taught as multiplication reversion.

Second, minute, hour, and day measures.

Calendar measures.

Dividing two, three, and four place numbers by one digit (long division method)

Practical problems in measurements and cost accounting.

Dividing two, three, four, and five place numbers by two place numbers.

Problems involving both multiplication and division.

Board measure.

Interest taught as money rent.

Discount taught as cents off dollar.

### *Group VI*

Per cent. taught as cents on dollar.

Simple direct commercial problems, loss and gain, insurance, taxes, commission, duties, etc.

Addition, subtraction, multiplication, and division of simple fractions.

Problems involving the use of fractions.

Household and personal budgeting.

## HISTORY AND CIVICS

Purpose—History and civics are taught largely from the view-point of building up right personal and social attitudes, somewhat from the view-point of developing outside interests and contacts, very little from the view-point of imparting academic information.

### *Groups I and II*

Bible stories and biographical history inculcative of such attitudes as kindness, courtesy, loyalty, courage, neatness, truthfulness, and industry.

Talks, stories, and dramatization of the helpful policeman; the brave fireman; kind judge; our friends, the Big Brother and Big Sister; the hospital; the clinic.

### *Groups III and IV*

Bible stories and biographic history further inculcating the attitudes of section 1, and others such as patience, perseverance, punctuality, exactness, thrift, co-operation, trustworthiness.

Talks, stories and dramatization of postal service; savings bank; Y.M.C.A.; Y.W.C.A.; church; Sunday school; Boy Scouts; Girl Guides.

Historical sketches of the community.

Canadian History story series: The Indians; Columbus the persevering; Cartier the daring; Champlain the industrious; the patient Jesuits; the loyal Daulac; the courageous LaSalle; Madeleine the trustworthy; English and French quarrels; Capture of Quebec; English and French co-operation; English and American quarrels; the new American nation; Canadian explorers; Canadian and American quarrels; Brock; Tecumseh; Laura Secord; Canadian and American co-operation; co-operation among the provinces; our railway builders, the thrifty Strathcona, the exact Fleming, Van Horne the worker; Dominion co-operation; the Great War; Empire co-operation.

Industrial history—Construction of homes; lighting of homes; heating of homes; ways of cooking; clothing; shoes.

### *Groups V and VI*

Political co-operation—a simple, non-technical explanation and dramatization of: school government; municipal government; provincial government; dominion government; the Empire; choosing representatives who are wise, careful, unselfish, etc.

Financial co-operation—the bank, safety, interest, thrift, reliable advice from a bank manager; credit, credit and character, mortgages, notes, loans, advantages and disadvantages, need of banker's advice; insurance, advantages to individual and to family, need of advice from a banker or social worker before insuring; stocks and bonds, advantages and disadvantages of such investments, danger of canvassing salesmen, need of reliable advice.

Social co-operation—Sunday school, church, Y.W.C.A., Y.M.C.A., Boy Scouts, Girl Guides, other boy and girl organizations, service clubs, social workers, hospitals, clinics.

Empire co-operation—stories of early Britain; how the British learned to co-operate; great British explorers; how new lands were added to the Empire; how Britain has helped weaker nations; the Great War and its heroes.

Industrial history—Methods of ploughing and planting; methods of harvesting; methods of threshing; telling time; story of the alphabet; water travel; land travel; air travel.

## GEOGRAPHY AND NATURE STUDY

Purpose—Geography is taught largely for the purposes of developing right social attitudes, familiarizing the pupils with employment opportunities, and creating out-turned interests.

Acquisition of directly practical information is important, but the impartation of academic knowledge should be of slight concern to the teacher of direct-learning pupils. The following course which has been outlined in some detail is suggestive, not regulative. It typifies the kind of programme which every good teacher will outline for herself.

*Groups I and II*

Grocery, dry-goods, hardware, and drug stores.

Market; orchard and four fruits; garden and five vegetables; farm and four grains; harvesting; threshing; flour-mill; bakery.

Postal service; police service; court house; hospital.

Right, left; east, west; north, south.

Animal friends, horse, cow, dog, sheep.

Thanksgiving; Armistice Day.

Autumn time; autumn months.

Preparation for winter by animals, by people.

Cloud; rain; wind.

Winter time; winter months; winter trees—pine, spruce, cedar.

Christmas; New Year.

Day and night; day-break, sunrise, morning; forenoon, noon, afternoon; sunset, twilight, evening; to-day, to-morrow, yesterday; week; days of week.

Frost; snow; ice.

Highway; railway; street cars; boat; aeroplane.

Springtime; spring months; Easter; spring-cleaning; maple-sugar making; ploughing; sowing.

Our feathered friends—hen, pigeon, robin, sparrow.

Common trees—maple, elm.

Local forms—river, rapid, waterfall, lake, shore, etc.

Summertime; summer months; four seasons; twelve months.

Dominion Day.

*Groups III and IV*

Preparation of weather chart for the three autumn months.

Fruit and vegetable preservation; honey-making.

Insect neighbours—bee, butterfly, ant, grasshopper.

Animal friends—rabbit, squirrel.

Autumn plants—thistle, goldenrod, walnut, chestnut.

Preparation of plants for winter.

Planting winter bulbs.

Study of vicinity—schoolroom on sand-table, map picture of schoolroom; school yard on sand-table, map picture of school yard; park on sand-table, map picture of park; school vicinity on sand-table, map picture of vicinity.

Preparation of weather chart for winter months.

Study of the main streets of city, car lines, principal buildings, parks; drill on ways of getting about town (in towns and villages the outlying district should be included).

Winter activities—winter animals at home; winter birds at home; the woodsman; the ice harvester.

House building—story of a board; story of a brick.

Preparation of weather chart for the spring months.

Story of five principal industries of the community.

Canadian children of the seaside, mountains, prairie.

Children of other lands.

Springtime; how seeds sprout; how buds open.

Spring flowers—spring beauty, hepatica, trillium, adder's tongue, dandelion.

Spring life—frog, fly, mosquito.

Preparation of weather chart for summer months.

### *Groups V and VI*

Local surroundings, cardboard or sand-table representation of outlying district; study of industrial activities of the district; development of corresponding highway maps; reading road maps and road signs; development of local railway maps; reading and interpreting motor bus and railway time-tables.

Canadian industrial geography, study of processes rather than of map locations with a view to creating interests, fostering patriotic and co-operative attitudes, and acquainting the pupil with occupational possibilities; grain growing; milling; cattle raising; meat products; leather and its products; dairy products;

fruit; fur; sea-fishing; lake-fishing; lumbering; paper-making; ship-building; furniture-making; coal-mining; oil; gas; metals; asbestos; lime; cement; brick and tile; salt; steel making; wireworking; forging; turning; casting; spinning; weaving; knitting; sugar-making; rubber goods; hydro-electric; water supply.

Study of the Empire—our empire and flag; Great Britain; British people, British industries; Australia and her people; New Zealand; India; South Africa; East Africa; West Indies; Newfoundland.

People of other lands—French; German; Italian; Russian; Dutch; Japanese; Chinese; American; Mexican; Argentine.

### BUSINESS HABITS AND ATTITUDES

The establishment of right social attitudes and the formation of efficient social habits are ultimate aims in education. In our present complex civilization the man or woman who cannot function socially cannot succeed.

Verbal methods of instruction and negative forms of training are as little productive in social as in academic or vocational education. It is essential that both teacher and pupil conceive social behaviour as a progressive series of accomplishments which may be mastered by means of instruction, participation, and practice in much the same fashion as arithmetic or woodworking. The pupils in each group should be made clearly aware of the specific accomplishments to be attained, their progress should be duly recorded, and their promotion acclaimed as an achievement of consequence.

Positive, in contradistinction to negative methods of instruction in social behaviour having been the subject of but little recorded experimentation, the course outlined is necessarily tentative in character. Teachers should feel at liberty to adjust this programme to the particular needs of their respective schools. Nor is the programme to be interpreted as meaning that the teaching of various forms of social behaviour is to be restricted to those groups under which such forms are specified; but rather that intensive periods of training and definite standards of accomplishment are to replace vague methods of character training.

## DILIGENCE

### *Groups I and II*

Completing all assigned seat-work over a period of one month.

Completing without compulsion over a period of one month all craft work undertaken.

### *Groups III and IV*

Undertaking without suggestion, over a period of one month, other seat-work when assigned seat-work is finished.

Completing assigned homework over a period of one month.

### *Groups V and VI*

Ability to carry on during the absence of the teacher.

Ability to undertake and carry through voluntary school activities.

Ability to undertake and carry through voluntary out-of-school activities.

## NEATNESS

### *Groups I and II*

A "perfect" record for one month in the matter of—clean face and hands; clean finger nails; clean teeth; tidy hair.

### *Groups III and IV*

A "perfect" record for one month in the matter of—tidy desk and surroundings; care of books and materials; hanging clothing in the cloak room; neatness of exercises.

### *Groups V and VI*

A "perfect" record for one month in the matter of—position at seat; position during recitation; position in lines; carriage while walking.

## COURTESY AND CO-OPERATION

### *Groups I and II*

A "perfect" record for one month in the habitual and proper use of "please," "thank you," "beg pardon," "yes (or no), Miss —."

A "perfect" record for one month in asking permission to speak or leave place.

### *Groups III and IV*

A "perfect" record for one month in—refraining from interrupting an engaged pupil or teacher; carrying on activities quietly; changing occupations quietly.

Ten voluntary assistances to the teacher during one month.

### *Groups V and VI*

A satisfactory month as host or hostess to visitors.

A satisfactory month as mentor to a junior.

## TRUSTWORTHINESS

### *Groups I and II*

A satisfactory month's record in caring for—the sink; the blackboard; the floor.

Demerits—lying, cheating, stealing.

### *Groups III and IV*

A satisfactory month's record in caring for—the plants; the work tables; the library.

Demerits—lying, cheating, stealing.

### *Groups V and VI*

A satisfactory month's record in caring for—the tools; the exhibits; supplies; the lines.

Demerits—lying, cheating, stealing.

## PROMPTITUDE

(1) Attendance, (2) falling into morning and noon lines, (3) preparing for dismissal, (4) preparing for recitation, (5) performance of orders.

May be recorded negatively, but should be accredited positively.

*Groups I and II*

A "perfect" record for one month in any one, in any two.

*Groups III and IV*

A "perfect" record for one month—in any three, in any four.

*Groups V and VI*

A "perfect" record for one month in all five.
A "perfect" record for two months in all five.

### MUSIC

*Groups I and II*

*Rhythm*—

4/4 measure—hand-clapping to find metre—tapping time with feet—stepping time—walking.

3/4 measure—swing arms—marching.

Rhythm Band

*Appreciation*—

Listening to memory tests—interpreting nursery rhymes—See-saw, Pit-a-pat, Giants, etc.

*Production*—

Simple rote songs—"Good Morning to You"—"Fido and His Master"—"Postman," etc.

*Groups III and IV*

*Rhythm*—

Walking valuation of quarter, half, and whole notes.

Rhythm Band.

*Appreciation*—

Associating music with story and picture—"In a Clock Shop," Orth—"March of the Little Lead Soldiers," Pierre—"The Tailor and the Bear," MacDowell, etc.

*Production*—

Teaching of phrase repetition—application of syllables—rote songs.

*Groups V and VI*

*Rhythm*—

Establishing feeling for valuation of notes—for phrase and cadence.

Rhythmic drawings on blackboard.

Rhythm band and score.

Folk dancing.

*Appreciation*—

Title, composer, and story of the composition of such pieces as "Narcissus," Nevin; "Minuet in G," Beethoven; "Toy Shop," Herbert; "Spring Song," Mendelssohn; etc.

*Production*—

Introduction of staff.

Sight reading.

Theory—staff—treble clef—note and rest—key signature—time signature—alphabet.

Rote songs.

Harmonica band in senior schools and classes.

## SCIENCE

The majority of direct-learning children are able to understand elementary natural laws as objectified in the working of a piece of apparatus. Theoretic conceptions and statements of abstract principles are much less readily comprehended. Hence teaching should be largely confined to an experimental objective study of practical problem situations of everyday life.

### LOWER SCHOOL

*Boys and Girls*

*Change of state*—Experiments with ice, water, steam, paraffin, sulphur, and mercury.

Practical study of paving tar, kitchen paraffin, drip from water pipes, steam and frost on window and windshield, care of refrigerators, cause of clouds, rain, snow, fog; process of soldering, brazing, casting, and forging.

*Evaporation at ordinary and higher temperatures*—Experiments with water, alcohol and gasoline.

Practical study of clothes drying, refrigeration by evaporation, sealing containers, danger in the use of gasoline.

*Solutions*—Experiments with cold and hot water and salt, mercury and silver, water and ammonia. Practical study of refrigerator taints, caking of salt, removal of stains, grease, paint, rust, and tarnish, preparation of tea and coffee, crystallization of syrup and honey.

*Expansion and contraction*—Experiments with solids, liquids, and air.

Practical study of methods of removing corks and jar rings; the cracking of fire-pots, frozen water pipes and glass; hot-water heating; the thermometer, use of the thermometer in baking, butter-making, steel treating; ventilation of houses; the gas-engine.

*Conduction*—Experiments with rods of steel and wood.

Practical study of insulation of houses and refrigerators, summer and winter clothing, coverings of animals.

*Ignition*—Experiments with gunpowder, shavings, charcoal, coke, coal.

Practical study of spontaneous combustion, electric insulation, stove-pipe insulation, gas and oil explosions.

*Combustion*—Experiments to show the need of air.

Practical study of the regulation of stove and furnace dampers, the smothering of fires, the closing of doors in a burning building.

*Autumn Biology*—Planting bulbs, slipping plants, protecting shrubs from frost,

*Spring Biology*—Experiments on the germination of seeds in relation to heat, air, and moisture. Practical application to garden planting, watering, and cultivating.

Life history of fly, frog, mosquito, and butterfly.

Methods of preventing the breeding of flies and mosquitoes. The silk industry.

## MIDDLE SCHOOL

### *Boys*

*Magnetism*—Experiments to show polarity.

Practical study of the compass.

*Electro-magnetism*—Experimental study of electro-magnetism.

Practical study and construction of an electric bell, telegraph set, and motor. Examination of a telephone and of a dynamo.

*Electric Conduction*—Experiments with good and poor conductors.

Practical study of insulation, fuse plugs, and wiring.

Construction of an electric toaster.

*Batteries*—Experiments *re* direction of current. Practical study of a wet cell, a dry cell, a storage battery, the connection of batteries.

### *Girls*

*Bacteria*—Experiments to show why bread, meat, and fruit spoil.

Experiment to show methods of preservation, heating, sealing, curing with sugar, salt, spices, and vinegar.

Practical study of the canning of fruit and vegetables, pasteurizing milk, packing fruit, the action of yeast.

*Chemistry*—Experiments to show the nature of acids, lyes, and salts.

Practical study of common household forms, the making of soaps—harsh and mild soaps, the removal of acid and metallic stains.

Experiments to show the difference between hard and soft water, pure and impure drinking-water.

Practical study of methods of softening water and methods of purifying water.

### *Boys and Girls*

*Production of Sound*—Experiments with plates, strings, and tubes to show that sound originates in vibrating objects.

Practical study of various sound instruments.

*Loudness, Pitch, and Quality*—Experiments with string and tube instruments.

Practical study of voice production and control.

*Spring Biology*—Experiments to show that plants need soil, sunlight, water, and air (drainage).

Practical study of drainage in flower-pots, window-boxes and farm lands.

Experiments to show the movement of water in soils.

Practical study of cultivation and mulching.

Experiments with different kinds of soil to show variety in absorption, retention of moisture, friability, and fertility.

Practical study of fertilization, methods of modifying soil texture and correcting acidity.

### UPPER SCHOOL

#### *Boys*

*Measurements*—Review the measurements of length, area, time, temperature, and weight.

Practical study of machines used in determining weight—scales, spring balance, lever balance.

*Force and Power*—Explanation in terms of weight.

Experimental study of the lever, pulley, wheel and axle, sliding plank, and screw.

Practical study of their applications.

*Transmission*—Experimental study of the pulley ,belt, gear and friction drive.

Practical study of their applications.

*Friction*—Experimental study of the causes of friction.

Practical study of methods of overcoming friction.

*Correlation*—An experimental study of the various metals, woods, paints, etc., met with in the shops.

An experimental study of problems met with in shop practice.

#### *Boys and Girls*

*Reflection of Light*—Experimental study of the nature and cause of reflection.

Practical study of water tan, wall glare, snow blindness, effective lighting arrangements, placement of lights and mirrors in dwellings.

*Concave Mirrors and Convex Lens*—Experimental and practical study of reflectors, searchlights, mirrors, magnifying glasses, spectacles, and the camera.

*Colour*—Experiments with a prism. Practical study of colour blending, colour matching, colour harmony and contrasts, the selection of clothing materials.

### *Girls*

*Correlation*—Experimental study of materials found in the shops—cottons, wools, silks, linens, flours cereals, sugars, baking-powder, baking-soda, tea, coffee, cocoa, chocolate, etc.

*Measurements and Mechanics*—Experimental and practical study of—(1) the hanging of curtains, over-draperies, pictures, and window blinds, (2) window pulleys, catches, and supports, (3) adjustment of shelves in kitchen, bathroom, and closet, (4) mechanism and adjustment of apparatus connected with the water system—tank, taps, etc.; care of bath, toilet, sink, and drain, (5) mechanism and adjustment of apparatus connected with the electric system—metre, bulb, switch, fuse plug, electric irons, etc., (6) mechanism and adjustment of heating system—care of furnace, stoves, flues, building and maintaining fires, cost of fuels, etc.

## HEALTH AND PHYSICAL TRAINING

The subject of health should be closely correlated with the pupil's habits during the daily routine of school life, not taught by formal lesson only. The order of development in interest is, first, the needs of the individual, then the family group, and finally the community.

Physical training provides activities for the promotion of health. It should aim at developing alertness of movement and organized play. Effort should be made to develop activities for recreation hours away from school.

### *Groups I and II*

Simple lessons on the care of hands, nails, teeth, and hair.

Lessons on eating, drinking, and breathing.

Necessity of sunlight, fresh air, cleanliness, good food, and sleep.

Health posters or health books developed.
Physical exercises suitable to the class.
Organized games.
Some of these can be correlated with academic work.

### *Groups III and IV*

Lessons on the care of eyes, ears, nose, and throat.
The subject of balanced diet introduced.
Suitable clothing discussed.
Health postures continued.
Evil effects of stimulants and narcotics.
Elementary first aid.
Physical exercises requiring alertness.
Exercises with wands or clubs.
Mat work if possible.
Organized games indoors and outdoors.
Folk dancing.

### *Groups V and VI*

Evil effects of stimulants and narcotics.
Care in diet, seasonal foods, balanced meals.
Suitable clothing for various needs.
First aid, and, where conditions permit, elementary home nursing.
Factors affecting health in the home—the location of the house, ground, air space, proximity to water, ventilation, pure and impure water, contagious diseases.
Conditions in industry which affect health.
Exercises requiring more grace of movement.
Development of poise.
Mat work.
Organized games.
Encouragement of swimming and other activities for leisure hours.
Encouragement given to the children to join such organizations as the Y.M.C.A.

## ART

The course in Art should aim at developing in a pupil an appreciation of beauty in the objects around him in his daily life. It should aid him to express this appreciation throughout the various activities, in which he engages, whether it be the arrangement of a written page, the spontaneous expression of a thought with a paint brush, the construction of an object, or the decoration of his environment.

### *Groups I and II*

Freehand drawing with pencil or crayon of natural forms and interesting objects.

Illustration of some activity, recognition of six colours—red, orange, yellow, green blue, violet.

Single line capital letters.

Picture appreciation combined with music.

Plasticine models of objects or illustrations of stories.

Paper-cutting and mounting.

### *Groups III and IV*

Drawings in pencil, crayon, or water-colours of fruits and flowers.

Simple landscapes.

Animated drawings.

A design suitable for application to some piece of craft work.

Lettering improved. The production of other colours from red, yellow, blue.

Picture appreciation and picture scrap-books.

Correlate with composition and other subjects.

Illustration of stories by drawings and plasticine.

Blackboard drawing.

### *Groups V and VI*

Drawings of flowers, fruit and trees.

Simple landscapes.

Design for application to craft work.

Illustration of geography and history by salt maps.

Introduction to mechanical drawing.

Lessons on appreciation of art in regard to home furnishings, clothing, houses, gardens.

The appreciation of pictures, their mounting.

The choosing of pictures for the home.

Posters and advertising work.

## CHAPTER V

# COURSES IN HANDWORK

THE suggested courses in Hand Work have been divided into three parts. In each subject Part I deals with elementary processes. Part II covers essential processes and Part III deals with the application of these processes to life problems. The teaching of craft work should not be fragmentary, but a perfect concatenation, not only within each craft, but in its interrelation with other crafts and concomitant academic work. The wise teacher prepares her schedule carefully to make the most advantageous use of each process learned, so that its expansion may be as broad and far-reaching as possible; for instance, paper and cardboard work are an introduction to book-binding, wood work, and metal work. They can be closely correlated, also, with practically every academic subject. Mat weaving and card weaving can be used as introductory steps to weaving, basketry, sewing and design in art work. A little preliminary thought given to the choice and arrangement of subjects will tend towards a smoothly running time-table and a rich curriculum.

Children should be promoted on a basis of processes learned, not by the number of models made. Therefore, no definite number of models has been assigned to each group. Older children may grasp a process after completing one or two models and advance more rapidly than younger children.

Each child should start with a piece of work sufficiently simple to be well done. If he is given work too difficult, he either becomes discouraged or forms the habit of being satisfied with poor work. It is better for a child to be taught a few things well than to be hurried through an over-extensive curriculum. When repetition of processes is necessary, it can be given on a variety of models.

Boys and girls learn practically the same handwork until adolescence, then specialization is effected; needlework and housework are emphasized with girls, woodwork and metal work with boys. These, then, should be considered major subjects. Other craft subjects are developed as the teacher deems advisable with her particular group.

If a class is composed largely of adolescents, the same curriculum should be followed with adjustments. The early steps will be covered more rapidly. These are needed to insure a good foundation for future work. The latter part now assigned to groups V and VI will then be expanded. The teaching should be practical and the problems as nearly as possible like those of actual life.

This adjustment of the programme is also applicable to training classes which are composed entirely either of boys or of girls, as the segregation of the sexes allows a more intensive development of major subjects.

## WOODWORK

### *Groups I and II*

Strip woodwork using thin wood, ¼″x ⅜″.

Coping-saw exercises—(1) one-piece models, such as a toy or basket base, (2) two-piece models and simple movable types of toys.

Back-saw exercises, cutting to length.

Planing edges to width.

Simple whittling.

Plain butt joints with brads and glue to be used; finish to be water colour or crayola with shellac or wax.

Measurements to be simple—1″, ½″.

The use of the following tools—coping saw, hammer, file, sandpaper, back-saw and an introduction to the plane.

Material to be chiefly ¼″ and ½″ basswood.

Terms to be learned—end, edge, side of board; length, width, thickness; grain, level, square, straight.

Recognition of common forms, such as square, circle, rectangle, triangle.

### *Groups III and IV*

Coping-saw exercises of a more advanced type.

Thicker wood may be given, patterns to be used.

The making of a simple pattern on squared paper.

Models—toys with bases, wheels, etc.

Trueing-up exercises.—planing surfaces to thickness and width, planing end grain. Chamfering. Fastening with glue, brads, and screws. Centre and end half lap joints.

Use of brace and bit, countersink, rip and cross-cut saws, chisel, spokeshave, screw-driver, brad-awl.

Develop measuring to ¼″ and ⅛″; the use of written directions; care of tools.

Finish with paint or enamel, or stain and shellac.

Brief studies in lumber; recognition of three native woods; defects in lumber.

### *Groups V and VI*

Introduction of larger projects and heavier materials.

Gluing up of stock.

Working from drawings instead of patterns and also from written directions.

Tool exercises of a more advanced type.

Special lessons on care of tools, sharpening of chisels and plane irons. Models to be simple articles for home or schoolroom, e.g., book racks, tool racks, window-boxes, bird-houses, filing boxes, book cases, lamp, plant stand, magazine racks.

Studies in the seasoning and the dressing of lumber, and its care.

In classes where this curriculum can be extended the following outline of work is suggested:

Repairs to furniture; refinishing of wood; glazing windows; care of floors; carpentry, introducing tongue and grooved lumber, scantling 2″x 4″; fitting of hinges and locks; cutting sample jack rafters; laying out stair runners (cellar stairs); shingling or roofing as on dog kennel. Models—sawing trestle, dog kennel, set of porch steps, small cupboard, batten doors, radiator covers.

### NEEDLEWORK

It is highly desirable that the course in sewing should be purposeful and well directed, as it is a major subject for girls. Models should be wisely chosen. They should be of interest to the children and of a practical nature. Even the earliest models on canvas can be made into usable ticket holders, mats, or napkin rings. The material selected should be both suitable for the purpose of the article and of such a nature that the child can handle it with ease. Too much embroidery should be avoided, particularly the embroidering of ready-stamped articles. While the pleasing effect is easily obtained and is quite impressive to the general public, the educational results are almost negligible compared to those obtained from the construction of an article requiring a discussion of material, size, and measurement. Older children can be given more elaborate and larger models than little children.

#### *Groups I and II*

*Processes*—Breaking thread; threading needle; tying knot; basting; running stitch even and uneven; simple gathering; blanket stitch; overhanding; decorative stitch (one of outline, chain, lazy daisy, coarse cross stitch); turning a straight hem.

Either spool knitting or rake knitting.

*Models*—More processes than one can be taught on the following models. Straight edges should be used where possible:

Canvas ring; canvas ticket holder; chambray ticket holder; pencil cases; wash cloth; bath towel; duster; runner; protection cloth; feeding bib; curtain tie-backs; pot holder; book cover; knife, fork and spoon holders; burlap purse; stuffed animal; work cover apron; small bag; luncheon set.

*Material*—Canvas (Penelope or Java); gingham; chambray; Turkish towelling; cheese cloth; unbleached cotton; huckaback; tape; chintz; juvenile cloth; flannelette; burlap; wool; silkene; sewing cotton.

#### *Groups III and IV*

Turning curved hem; bias binding or bias facing; French seams; fell seams; hemming; decorative stitch (one of hemstitch, featherstitch, fagoting); sewing on buttons; stocking darn (develop from card weaving); knitting with needles or crocheting; treadling and threading a machine if one is available; use of a simple pattern to cut out a model.

Discussion on suitable clothing for seasons, for work and for play.

*Models*—Curved edges may be used.

Tea towel; hand towel; doilies; laundry bag; doll's bedding; knitting bag; shopping bag; wall pockets for shoes; apron with binding; pyjamas case; pillow slips; baby's sun tan suits; cooking apron and hair band; table runners; luncheon set; table cover; cushion cover; small quilt.

*Materials*—Tea towelling; huckaback; cambric; flannelette; unbleached cotton; gingham; chambray; juvenile cloth; chintz; sateen; wool; silkene; sewing cotton.

### *Groups V and VI*

Machine stitching; button holes; patching; use of commercial patterns if possible.

Emphasis should be placed on the application of previous steps learned to "life" problems.

Discussions regarding suitable materials and clothing for various seasons and occasions, school work, street, underclothing, outer garments.

In classes where the pupils are all girls this phase of the subject can be enlarged and correlated with art, hygiene, arithmetic, and other academic subjects.

*Models*—Slip; kimono; night-dress; brassiere; bloomers; dress of simple type; beret and purse.

*Materials*—Longcloth; nainsook; flannelette; chambray; sateen; gingham; print; felt or woollen cloth.

## MANICURING AND HAIRDRESSING

Manicuring and hairdressing should assume an important place in the curriculum of the Lower School in promotion classes, in the interests of health, cleanliness, and personal habits.

During the second year they should occupy a very small part of the time, only the amount necessary to maintain the habits of the class at a desirable level. In the Upper School a greater proportion of time should be devoted to these subjects, but only by those students who intend to specialize in this line of work as a future career.

*Lower and Middle School (all students)*

*Manicuring*—Care of manicure case; filing and cleaning nails; cleaning cuticle; removal of stains; polishing.

*Hair-dressing*—Care of brushes and combs; combing and parting hair; trimming the hair.

Shampooing; making the shampoo, massage, washing, and drying.

*Upper School (students specializing only)*

*Manicuring*—Practice in manicuring others.

Application of nail white and various enamels.

*Hairdressing*—Cutting various styles of bobs.

Tongs introduced; wrist movements, heating, curling end hair, marcelling.

Scalp treatments.

### HOUSE WORK

The term "house work" is used here in a broad sense to cover any activity dealing with the management of a house otherwise than needlework or cooking. The number of activities which it is possible to undertake in training and promotion classes varies with the type of pupil and the accommodation.

The following outline of topics is suggested, not in the expectation of its being adopted as a whole, but rather that from among its many suggestions some topics will be found for every class. Much of the teaching will be incidental and closely correlated to other subjects.

Children leave school from special classes at sixteen years of age to face the problems of life. Their solutions are frequently entirely inadequate, but the problems occur and recur just the same. Many arise in connection with their home life. Simple operations which we learn incidentally or solve through our power to generalize, present real difficulties to retarded children. The home may be simple, perhaps but a single room, or it may be a house. Its care has responsibilities and problems attached. We may not consider our graduates capable of managing homes, but the fact remains that many not only have homes to care for, but have children as well. A little forethought in planning a curriculum may make it possible to include problems of vital interest to the future of the pupil. Practice in the solution of life problems is a most valuable asset to a child's armour of preparedness.

### *Groups I and II*

Simple activities and responsibilities, such as tidying their desks, cleaning the blackboard, watering the flowers, washing paste dishes, assisting older children to tidy cupboards, to set the noon lunch table, and to serve milk.

*Household Mechanics*—The use of a few tools later useful around a home—hammer, coping saw, drill, file, and sandpaper.

### *Groups III and IV*

*Cleaning*—More responsibility regarding cupboards, dishes, milk bottles.

If towels are used, they can be rinsed as an introduction to laundry work.

*Household Mechanics*—More proficient use of a few simple tools. A screw-driver should be included, and the use of an oil can for locks and hinges.

Sources of some household materials—salt, sugar, tea, cocoa, cheese, butter, cereals.

This should be correlated with geography.

*Service*—Serving developed as far as circumstances permit; the passing of a plate, the serving of a glass of water, etc.

*Diet*—This should receive attention in connection with hygiene and cooking.

*Clothing*—Discussions regarding this connected with needlework and hygiene.

### *Groups V and VI*

*Cleaning and Laundry Work*—Polishing floors, metals; cleaning sinks, closets, etc.

Laundering of cotton, woollen, and silk fabrics.

Disinfectants.

*Household Mechanics*—Mechanism of stove or furnace; water tanks; adjustment of blinds; use of a wrench; washers on taps; putting up blinds; shelves and curtains; electric fixtures—dangers.

*Household Management*—Simple household bills; paying bills, taxes; buying food and clothing. Correlate these with arithmetic and geography.

Suggestions regarding ventilation in home, water supply, air space for sunshine, sanitation, disposal of waste. Correlate with hygiene.

Decoration of home. Correlate with art.

Care of home—bed-making, sweeping, dusting. Correlate with home nursing.

*Service*—Table setting, serving and manners.

*Diet*—Refer to hygiene and cooking.

*Clothing*—Refer to needlework and hygiene.

### COOKING

Cooking is an optional subject in the curriculum for mixed training classes owing to the impracticability of installing suitable equipment in every classroom, but is a major subject for girls' promotion and training classes. Up to the present time boys have predominated in mixed training classes, and it has been of greater importance to install equipment for woodworking than for cooking. The number of girls enrolled being on the increase makes it possible to include and intensify the teaching of subjects of interest to them.

Some classes attend household science centres for their formal cooking lessons. Others have cooking equipment installed in the regular classroom. This varies from well-appointed apparatus sufficient for individual cooking to a few utensils stored in packing-box cupboards. Obviously, it is impossible for all the classes to follow a specified curriculum. The arrangement of lessons and choice of topics must depend on the accommodation and equipment available, and on the calibre of the class. The responsibility for the curriculum must, therefore, rest upon the teacher.

The following suggestions show a few elementary topics grouped according to difficulty. Some of the dishes which appeal particularly to children have been marked with an asterisk.

### *Groups I and II*

Beverages—Cocoa; eggnog; lemonade.

Baked vegetables; fruit—*potato; *apple.

Stewed fruit—applesauce; prunes.

Eggs—soft cooked; hard cooked.

Care of—milk bottles; dish towels (rinsing); garbage pail (lining).

Cleaning—spoons; vegetables (potato, lettuce); kitchen sink.

Simple table setting, simple table service, and manners.

### *Groups III and IV*

Cooked fruit (introducing measurement)—*apple compote; baked banana.

Boiled vegetable with drawn butter.

Cereal—fine; coarse; rice.

Cream sauce—on toast; with vegetable; with egg.

Cream soup—cream of tomato soup; corn; potato.

Milk desserts—junket; blancmange.

Care of—ice box; stove; garbage pail.

Cleaning—knives, forks; silver; brass; nickel; enamelware; graniteware.

Table setting and service improved; invalid tray; manners.

### *Groups V and VI*

Scalloped fruit; vegetable—*Brown Betty; scalloped potato.

Luncheon dish—Spanish rice; macaroni and tomato; macaroni and cheese.

Flour mixtures*—popovers; muffins; tea biscuits; variations, namely, baked fruit pudding (tea biscuit mixture).

Custard—baked; softed cooked; *creamy eggs.

Salad dressing—simple salads; *sandwiches.

Meat—Hamburg steak.

Serving a luncheon or afternoon tea.

If circumstances permit, attention should be given to the preservation of food. Much of this is taught incidentally. Some suggestions on the topic are given under Science.

## Reed and Raffia Work

Basketry is a good subject to inaugurate when quick results in handwork are desired for special reasons, but has not the far-reaching effects of either sewing or wood-work. It makes a pleasant change, however. If used too extensively when a class is started, the children are apt to expect the same quick results in other subjects.

Raffia wound over cardboard is pleasant work for young children but is not suitable for older ones. When sewn over reed it is excellent for a child who must sit quietly using only his hands, but should be used with discrimination. It becomes tedious and fatiguing to some types of children although beneficial to others.

### *Groups I and II*

*Basketry*—Introduce from mat or card weaving.

If the child is sufficiently advanced in wood-work let him make a wooden base himself. This requires sawing, filing, sandpapering, marking and drilling of holes. For young children let the spokes be of No. 5 reed fastened in the base with glue.

Cutting spokes even length (No. 4); fastening beneath base; weaving with single or two weavers; attention to joining of reed; cutting spokes diagonally at top or simple border as—(1) looping spoke and running it down beside the next, (2) looping spoke in front of next and down beside the second spoke.

*Raffia*—Wound on cardboard or used on sewing cards for mats; sewn with a simple stitch on Penelope or Java canvas.

### *Groups III and IV*

*Basketry*—Wooden base should be made by child himself, using paper pattern or compass, and cardboard gauge or ruler to mark holes.

Three weavers; joining of reed; combination of weavers on one article; coil; border such as rope or coil; high handles; ring handles; woven mat of reed (introduction to woven bases); use of stain and shellac as finish.

Cleaning of brushes in alcohol or turpentine.

*Raffia*—The sewing of raffia over coarse reed (No. 4) may be introduced, or raffia sewn on canvas for purses, bags or mats.

### *Groups V and VI*

*Basketry*—Woven base; tray; tray with glass; braid border; covering wood with reed for lamps, fern stands, etc.—use of paint and enamel for finish.

The pupil should be able to make a complete article alone.

## WEAVING AND RUG MAKING

Weaving on frame or Tyndall looms may be simple or elaborate. Young children should use a rug cotton or heavy wool as woof thread. Cotton warp is unsuitable as a woof thread. Its use takes too long a time to complete an article which is unattractive and practically useless. Older children can use finer woof threads and make quite elaborate patterns on a frame loom if they become skilled. The purchase of a foot-power loom, or four harness table loom is not recommended unless there are a number of senior children in the class.

Weaving is a constant repetition of the same process for a considerable length of time. It requires concentration to thread a loom, and patience to operate it. For these qualities it makes an introduction to the monotonous repetition of factory work.

Rug making requires simple processes, but the heaviness of material and the size of the articles make it wearisome for little children. Older children of low intelligence do well at this type of work. It can also be given as a group project.

### *Groups I and II*

Weaving oilcloth and paper mats; card weaving with wool or raffia; weaving a simple stitch on Penelope or Java canvas with wool or raffia; frame weaving with coarse materials, rug wool, heavy cotton warp, etc.; weaving on a mop loom if one is available; correlate with darn on cardboard, basket weaving, etc.

### *Groups III and IV*

Frame weaving with finer materials; finer work on canvas; weaving with a two-heddle table loom, or foot loom for large children; threading a two-heddle loom.

Rug making introduced by hooked or punched work on canvas for chair covers, stool covers, small mats.

Braided chair covers; introduce the braided mats. Spool knitting may be sewn for stool covers in the same way.

### *Groups V and VI*

More elaborate work on canvas; pattern weaving on four-heddle loom; threading a four-heddle loom; larger rugs hooked or punched on canvas; larger braided mats.

## Metal Work

### *Groups I and II*

Paper and cardboard work.

### *Groups III and IV*

Cardboard models, large size; use of squared paper for patterns; sheet metal work not requiring soldering, simple pin trays, link chains, etc.; adaptation of ready-made tins for cake cutters and scoops; twisted wire.

### *Groups V and VI*

Sheet metal work; simple soldering; lap seam; riveting; twisted wire of heavier type.

For classes where this curriculum is to be extended the following development is suggested:

Ornamental iron work—⅛″x ½″ iron bands for plant hangers, brackets; heavier bands for table and bridge lamps, stools and tables; making of cold chisels, screw-drivers, centre punches; use of centre punch, drills, rivets, tap dies, counter sink, seaming, tempering.

Sheet metal work—patterns of circular nature as funnels, etc.; use of compass and dividers.

Teach use of machines in bending seams, forming, wiring, and double seaming both round and rectangular work.

Home repair work.

## PAPER WORK, CARDBOARD WORK, AND BOOKBINDING

As every teacher is familiar with paper work in the classroom it needs no introduction here, except to emphasize that it should be closely correlated with academic subjects and other forms of craft work.

### *Groups I and II*

Cutting pictures from magazines and papers, starting with irregular outlines of easy form, proceeding later to straight edges and more difficult outlines.

Folding and cutting simple forms.

Mounting pictures and forms on cardboard or in scrapbooks.

Patterns using some of the simple forms as units.

Envelopes for reports; paper covers for workbooks; paper boxes, and baskets. Poster work. Seasonal cards, valentines, etc.

### *Groups III and IV*

Scrap books developed.

Book covers, using cardboard.

Cardboard models of objects which might later be made in wood or metal.

Use of ruler; use of squared paper to develop lettering and designs.

Block print designs, using dowel rod, rulers, etc.

Paper work with bottles, crepe paper work, papier-mache forms.

Desk blotters, telephone pads.

### *Groups V and VI*

Patterns developed.

Mounting of pictures for preservation.

Salt maps.

Exact measurement developed.

Scrapbooks developed as portfolios for cooking recipes, notes, etc.

Simple bookbinding.

Parchment lamp-shades.

## LEATHERWORK

Leatherwork is interesting for variety, but it is too expensive for extensive use. The complete equipment should only be purchased when there are a number of senior pupils in the class. It is more suited to promotion than to training classes, although the introductory processes are simple in nature.

### *Groups I and II*

Marking holes with a cardboard pattern on a small article, such as a napkin ring or purse; punching holes; lacing.

Felt from old hats may be used in place of leather.

### *Groups III and IV*

Placing pattern and cutting out article (a piece of leather of the approximate size required should be given the child); finer lacing; cut leather work; stitching by hand; introduce stamping and tulling.

### *Groups V and VI*

Develop earlier processes; placing of dome fasteners; lining of purses; machine stitching; simple modelling and colouring of leather.

## TYPEWRITING

It is recommended that the course in typewriting be started during the child's second year in the promotion class, thus making it a two- instead of a three-year course.

### *Juniors*

Use of typewriter in business.

Introduction to touch system; position at machine; simple exercises in fingering; placing of paper; knowledge of main parts of machine.

Memorization of keyboard.

Copying sentences and simple paragraphs.

### *Seniors*

Review of keyboard; practice for accuracy and speed; copying simple letter; addressing envelopes.

Attention to spacing.

Care of machine.

## DRAUGHTING

### *Lower School*

Practice in lettering, first using squared paper, develop to other forms requiring measurement. (See *Manual Training Manual*, page 123; for further reference see *The Ontario Teachers' Manual on Art*, pages 88, 110, 147, 188, 231, 281, 331.)

Practice in the use of drawing instruments, sheets of parallel lines, vertical, horizontal, diagonals at 45°, 60°, etc.

Construction of cardboard cube and simple stretch-out plan developed from this.

Mechanical drawing showing two views of rectangular or square solids.

### *Middle School*

Simple stretch-out patterns. These may be made in cardboard and later used as patterns for metal work.

Lettering developed.

Mechanical drawings of three views—Refer to *Manual Training Manual*, also Matthewson and Stewart, Plates V, VI, and VII.

### *Upper School*

Mechanical drawings of solids not right angles, square pyramid, cylinder, cone, etc.

Practical application of these to metal projects,—funnel, dust-pan, crumb-tray, etc.

Mechanical drawings of larger objects drawn to scale.

*References—Ontario Teachers' Manual on Manual Training.*

*Applied Mechanical Drawing*—Matthewson and Stewart.

*Practical Drawing for Schools*, Plates I, II, III, IV. James Lees.

### *Other Vocational Subjects*

No course of study has been outlined for the following occupational subjects in training and promotion classes, as the inclusion of any of these in the programme and the time apportioned to their development depend entirely on local circumstances. Several sub-topics have been suggested under each subject. Methods of teaching must be modified according to the same general principles as in the other subjects. One salient factor ever to be kept in mind is that retarded children have difficulty in making generalizations. They "learn by doing," and acquire by practice practical methods of dealing with everyday situations. The wise teacher will omit abstractions and technical terminology as far as possible.

### MECHANICS

Household mechanics; motor mechanics; bicycles; radios; electric systems (bells, etc.); floor polishers; vacuum cleaners; pumps.

### SHOEMAKING

Simple repairs; types of leather; care of leather; soling; cutting, and making shoes; economic aspect.

### Agriculture

Preparation of soil; planting; care of garden; gathering and disposal of produce for immediate use, market, or storage; value of product.

### Sewing, Tailoring

Repairing garments; sewing on buttons; making school uniforms and utilities.

### Cleaning, Pressing for Boys

Removing stains, cleaning and pressing of various fabrics.

## CHAPTER VI

# SPECIAL METHODS FOR DIRECT LEARNERS

IF second, third, and fourth-form classes are asked to "draw a picture of the strangest-looking animal you can think of (or imagine)," the majority of pupils in the junior form will sketch a camel, giraffe, ostrich, or other beast whose anatomy is characterized by some unusual feature. From intermediate grades are obtained drawings of this type—the body of a horse covered with sheep's wool and adorned with a man's head. Senior students likewise hand in composite productions, many of which exhibit evidence of a general determining idea in the mind of the artist. There may be represented an animal with the body and legs of a mammal, the wings and head of a bird, and the scales and fins of a fish, showing the artist had in mind the creation of a being fitted for existence in three elements. Here and there may be found attempts to devise a name in keeping with the structure and function of the novel creation—"seahorsebird," etc.

If pupils in junior, intermediate, and senior forms are given a manipulative puzzle to solve, an increasing tendency will be exhibited up through the grades to pass (1) from immediate to considered, that is mentally mediated, attempts, (2) from trial and error to planned, and (if the term be permitted pre-planned effort; since it is not unusual for fifth form pupils after some study to call to mind the key principle of a solution and succeed in their first attempt.

Children in the lower grades have power to control behaviour by the recall of more or less intact experience; pupils of intermediate grades not only recall, but also break up and reconstruct experience. Senior students are characterized by an increasing ability—(1) to purposefully plan and determine reconstruction processes, (2) to form experiential concentrates in the shape of abstract ideas which function as determinants in the formulation of plans, and (3) to abridge planning processes by the substitution of word thinking for image thinking—using paper credit for coin as it were.

School intelligence considered in its vertical aspect, as measured by the Binet Simon Test, would seem to be a gradient from haphazard particular thinking to purposeful abstract thinking. Perhaps a very satisfactory definition of the term intelligence as usually conceived would be "ability to eliminate trial and error forms of behaviour." To be able to plan truly and aright—to avoid fumbling—is surely the mark of intelligence in the world of real affairs.

In the previous paragraph "vertical aspect" was specified, since it is quite within the range of possibility that intelligence has several or even many dimensions. Some people think more loftily than others, some more broadly. Many successful men, apparently wanting in ability to pursue abstract trains of thought, are noted for capacity to keep in mind items of detail while considering a proposition. No auxiliary training class teacher is long at work before she is struck by the existence of remarkable mental differences between children having identical intelligence quotients. Perhaps a true estimate of intelligence should take into account horizontal as well as vertical measurements.

From a study of such data the teacher of auxiliary training and promotion classes may discover a key principle to unlock the secret of methodology. Since the vertical school intelligence of her pupils corresponds with that of junior and intermediate grades, she may say to herself:

"I shall use the phonic method of teaching word recognition, but sparingly with ten and eleven-year-olds, and not at all with eight-year-olds, since these pupils lack ability to break up and reconstruct experience. For the same reason I shall teach multiplication combinations as individual facts rather than as tables. My boys and girls can learn the table, but cannot readily break it up to get necessary individual facts while performing multiplication operations. I shall not insist on formal written solutions in arithmetic, since the children of my class do not think well in words and formulae. Each question should be presented as a 'pictured' situation."

Since the methods used by teachers of auxiliary training and promotion classes are but modifications of ordinary public and separate school methods, and since all auxiliary class teachers in Ontario have had normal school training and successful grade experience, the chapter on academic method can best be presented by briefly drawing attention to variations from standard procedure in each of the several departments of the curriculum. Seat-work and drills constitute such an important factor in the teaching of ungraded classes of direct learning pupils that it has been thought wise to devote an entire chapter to the discussion and organization of this phase of the work.

## READING

### *Group I*

Owing to the limited word-recognition vocabulary of pupils in this group and their difficulty in functioning analytic-synthetic processes of thought, the teaching of phonics should not be attempted. Object, picture, sentence, and action methods of presenting new words are most effective. Action games form the basis of word-recognition drills. Blackboard sentence stories containing a large repetitive element serve the purpose of introducing and practising the art of reading, for example

> a dog met a cat.
> the dog said "bow wow."
> the cat said "meow."
> "bow wow" said the dog.
> "meow" said the cat.
> the dog said "bow wow," and the cat said "meow."

The initial sentence capital seriously interferes with the process of word recognition and need not be introduced until the pupil reaches Group II. The initial capital in proper nouns, being a constant quantity, may be used from the beginning. Later it will constitute a basis for the study of the two forms of letters. In this group print is probably superior to script as a blackboard writing medium.

Pupils ten years of age and upward, who enter the class unable to read, have in all likelihood been negatively conditioned towards words used in the primer by reason of repeated failure in the grades. Should class organization permit, a new set of words might well be used in their case as an initial reading vocabulary.

### *Group II*

The initial sentence capital is introduced in blackboard reading and seat-work stories. The ordinary and the initially capitalized forms of a word are studied comparatively.

After the children have been well introduced to the primer, or in case of older pupils a corresponding supplementary reading primer, the study of common consonant and vowel sounds, together with a dozen or more sound families, may be undertaken as an aid to word recognition. The auxiliary training class teacher should, however, bear in mind that, with direct-learning children, analytic-synthetic procedures are incidental, repetitive procedures essential, and so avoid an elaborately detailed course in phonics.

Auxiliary training class pupils frequently suffer from speech defects, faulty enunciation and pronunciation. Oral recitation is not only an effective method of developing skill in the art of reading but may be used as a means of correcting faulty speech.

### *Groups III and IV*

In Groups III and IV the First and Second Readers, respectively, may be used with advantage in case of classes composed of non-repeaters. Where groups are made up largely of children who have already been through these books, it is highly desirable that corresponding supplementary reader sets be substituted, in order that new interest may be aroused and "learned by heart" recitations avoided.

In Group III the course in elementary phonics is completed. In both groups lesson transcription, being an active and repetitive form of study, has value as seat-work, but should be largely supplemented and varied by silent reading exercises directive of such activities as colouring, cutting, placing, moulding, etc.

A love of reading for its own sake can best be developed by encouraging a free use of supplementary reading material. There are on the market many cheap editions of simplified stories suitable for pupils in these groups. The teacher may prepare material by cutting out "bedtime stories," "child verse," and similar easily obtainable reading matter, and pasting these clippings on cardboard sheets of uniform size. These may be stored in some place of ready access, and the children should be encouraged to read them as a pastime when assigned seat-work has been completed.

### *Groups V and VI*

Owing to the fact that the Third Reader contains many abstract words and deals with many abstract topics more in keeping with the vertical mental development of grade pupils than the horizontal mental development of auxiliary training class children, it is expedient that supplementary reading sets be used exclusively in these groups. In Group VI of training classes and in the upper school of promotion classes, an interesting and easily-read novel whose moral tone is inculcative of worthy social attitudes may be substituted for a reader.

A fair proportion of time may profitably be devoted to reading and discussing suitable selections from the daily newspaper and from such magazines as *Rod and Gun*, *Popular Mechanics*, *Good Housekeeping*, as well as our own Canadian periodicals, the object being to facilitate interpretation of modern journalistic methods of writing and to establish in the pupil's mind pleasant associations with worth-while sources of reading matter. To this same end contact between the pupil and the public library should be made. The teacher may first act as sub-librarian, selecting and borrowing books for the fortnight, interesting pupils in reading them, and demonstrating with library cards methods of procedure in obtaining and returning books. Later, the class in sections or as a whole may be taken on a visit to a convenient public library, made acquainted with the librarian in charge, and with the facilities offered by the institution. The teacher would do well to enlist the interest of the librarian, help her make out a list of books suitable for direct-learning children, and arrange if possible that the borrowing cards used by the pupils shall bear a secret distinguishing mark.

It is sometimes difficult for a teacher fresh from grade work to realize that reading is not to be taught as with a final promotion examination in view. Formal definitions of words paraphrasing exercises, and other tasks which muddle the smooth flow of activity should be avoided. Skill in the art, satisfaction in the act, together with a cultivation of good simple tastes, constitute the dominant purposes of teaching in this department.

## Spelling

Frequently pupils enter auxiliary training classes with badly-jumbled spelling habits. These take time to disentangle and straighten out. Difficulty may arise in class through an attempt to teach the spelling of unfamiliar and abstract words whose significance is not understood by the pupil. Confusion as to meaning and pronunciation spreads to confusion in the matter of spelling. Apart from these complications the subject should not prove troublesome to direct-learning pupils.

Good spelling, like good writing, is less a matter of formal instruction than of constant supervision of exercises to see that all words are written neatly and spelled correctly.

A number of word lists have been compiled by well-known authors on a basis of use-frequency. These are of material help to the teacher in making out lists of words to be taught the several groups. They may likewise constitute a real hindrance in the case of a teacher who blindly follows the given sequence when dividing a list into lesson units. She is likely to have disparate, non-cohesive, uninteresting subject matter in her lessons, since use-frequency is a statistical not a pedagogical order of arrangement. The words constituting each group list should be arranged into lesson units on a basis of similarity in form or relationship in occurrence and use. Each word should find a place in at least three lessons. For example, "meat" might first be grouped with "eat," "treat," "seat," etc. Later it might be found under the heading, "What we eat for dinner," and still later under the caption, "What is found in a butcher shop."

Dictation tests are likely to become so uniformly monotonous that pupils fall into error through sheer inertia of "disinterest." The teacher should endeavour to vary their presentation, and at the same time emphasize the practical value of a knowledge of spelling. For example, she might say: "You are clerking in a butcher shop. Take the following telephone order: 1 lb. of lamb, etc." Or she might say: "You are a waiter in a restaurant, take this dinner order: celery, meat pie, brown potatoes, rolls, ice cream, coffee."

Homonyms should not be taught together in classes of direct-learning pupils.

## Composition

### *Groups I and II*

Oral composition methods differ but little from those employed in the grades. The purpose of the "talks" is to accustom the pupil to speak freely and distinctly before the group. In reproduction and picture-study stories the pupil should be trained to use good English, to speak distinctly, and to carry himself with ease and address. Later in the term, reproduction and picture-study stories may be written on the blackboard by the teacher in conjunction with the class. The sentence-a-line structure should be followed. Initial capitals and final periods may be made in coloured chalk, the sentence being compared to a train with a yellow headlight and a red tail-light. After reading the stories, the pupils transcribe them for seat-work, using crayons to make initial capitals and final periods.

### *Groups III and IV*

The transcription of blackboard versions of reproduction and picture-study stories is gradually superseded by freely-written exercises. The sentence-a-line structure should be continued for a time, and the teacher may with profit make on the blackboard a list of words likely to present spelling difficulties. The interrogation, quotation, and quotation-comma marks should be taught while the sentence-a-line structure is being followed.

Later in the term, several lessons should be devoted to changing the sentence-a-line structure into the paragraph unit. In each lesson the composition should be written in the first-mentioned form, and then changed by the pupils into a paragraph. When proficiency has been attained in these exercises, the pupils may thereafter write their compositions in the form of a single paragraph. The study of paragraph structure and multiparagraph compositions should not be attempted with these groups.

### *Groups V and VI*

Multiparagraph structure can probably best be introduced by means of oral composition lessons in connection with picture-study stories. "What happened before," "What is happening now," "What is going to happen," constitute three natural logical divisions easily understood by the children. Oral reproduction stories may subsequently be subjected to similar analysis: "How it began," "What happened," "How it finished," or "The first time it happened," "The second time," "The third time."

When sufficient proficiency has been attained in paragraph analysis and paragraph production in oral composition lessons, the problem may be transferred to exercises in written composition. First attempts might take the following fivefold form:

Study of the picture or telling of the reproduction story.
Analysis into three time divisions.
Oral narration of the sections by one or three pupils.
Blackboard reproduction by the teacher, with or without the help of the class, of the three paragraphs narrated.
Transcription by the pupils in their exercise books.

In subsequent lessons there would be successively eliminated —the blackboard reproduction by the teacher; the oral narration by the one or three pupils; the paragraph analysis by the class; the class study of the picture, or the telling of the story by the teacher. With advanced pupils, individual pictures may be allotted for preliminary seat-work in oral composition or assigned seat-work in written composition. Probably a time sequence and a three-paragraph analysis constitute the achievement limits of direct-learning pupils in the matter of written compositions.

Considerable attention should be devoted to the writing of business letters and the making out of business forms. Much of this work can be correlated with arithmetic lessons in which dramatized business activities and situations are portrayed.

It is interesting to learn from employment agencies that more applicants fail through want of ability to say "Yes, sir," and "No, sir!" than from any other single lack. In the senior groups much time should be spent in developing proper habits of conducting business conversations. This can best be accomplished by dramatized lessons, the class constituting the critical audience.

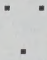
The teacher might say: "I am employment officer at the W— W— Company. Bill, Sam, and Joe, you may come forward in turn and apply for the job of messenger boy. The class will decide who is to get the position and why. Manner of approach, position while standing, clearness of speech, directness of reply to questions and courtesy are some of the things you should consider in making a decision."

The teacher should ever bear in mind that pupils in training and promotion classes learn directly, and that her own carriage, manner of speech, voice control, etc., will form most potent factors in the development or non-development of good habits among her pupils.

## ARITHMETIC

### *Group I*

Teaching pupils to count presents but little difficulty. There is, however, a very grave danger that the counting habit once established may persist beyond its normal function. Great attention should, therefore, be given to the immediately subsequent habits of number-picture recognition. Each picture should be presented in a constant form and associated with some well-known object; for example,

eyes;

eyes and nose;

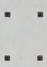



table corners;

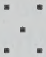
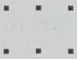
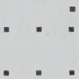
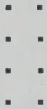
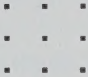


table with flower-pot at the centre;


automobile with two spare tires;


railway engine;

tower;


store windows.

When, by means of frequent drill, recognition habits have been established, but not before, corresponding symbols may be given. A great deal of the mathematical confusion existing in the minds of auxiliary class pupils can be traced to the premature presentation of number symbols while the child is yet at the counting stage.

Experience has shown that the addition combinations are most readily taught in the order given in the Course of Study (Chapter VI). Each should be taught and drilled, both in the given and inverted form, as a fact in itself. Such statements as "5 and 2 are 7" should be abridged as speedily as possible to the direct answer, "7." To facilitate the subsequent teaching of subtraction and to avoid in that connection the learning of two sets of tables, the answers to addition combinations and problems may at first be placed to the top rather than to the bottom of the question; for example, $\frac{6}{\substack{2\\4}}$. Both combinations and problems should be extensively associated with practical situations.

### *Group II*

The remaining addition combinations are taught in the same manner as in Group I. The establishment of addition-combination habits should be accomplished largely during recitation periods, by means of the action games and floor drills outlined in the succeeding Chapter. The writing out of tables as seat-work tends to prolong and fix the counting stage of ascertaining answers. Drill lessons should be arranged in sequences that proceed from slow and certain to more speedy responses. It is well to remember that speedy recognition of number combinations bears the same relation to arithmetic progress as word recognition to reading progress. So long as a child has frequently to stop and sound out words, he cannot advance far in the art of reading. Neither can a pupil whose attention is distracted from the mathematical situation by the necessity of counting up number combinations proceed far in the art of arithmetic. In this connection it may be noted, however, that pupils whose intelligence quotient lies between 50 and 60, are in many instances unable to progress beyond the counting stage.

Single-column addition questions with a maximum summation of 18, and which review all the addition combinations, pave the way to a study of extension tables. Counting to 50 and, later, to 100 by 10's, by 5's, and by 2's, likewise affords assistance. Single-column addition questions approximately summating, at first 50, and later 100, are used in connection with the learning of the extension table idea and serve to consolidate the acquisition. Considerable ingenuity may be exercised by the teacher in adapting such a series of addition questions to the progress of a class. When a satisfactory series has been evolved, it should be put into permanent form by typing, if possible, a number of copies. These may thereafter be used as seat-work and class work exercises.

It is an exceedingly common practice in actual everyday life to put down the carrying figure in multiple-column addition questions. There is no serious objection to this practice, and it has certain advantages in case a problem has to be re-checked. If the teacher follows the suggestion given above as to placing answers of addition questions at the top rather than at the bottom, the carrying figure should be placed at the bottom and added as an initial operation.

Subtraction can probably best be introduced by store play. 1, 2, 3, and 4-cent articles are purchased with a nickel; 1, 2, 3, 4, 5, 6, 7, 8 and 9-cent articles with a dime, and so on, using 15, 20 and 25-cent paying amounts. The clerk in each case counts out the change, beginning with the price of the article, for example, "A box of matches, 6 cents, 7, 8, 9, 10, and 10 is 20 and 5 is 25." After a degree of proficiency has been attained, certain of these problems identical in form with their corresponding addition combinations may be represented and worked out on the board; for example, $\begin{array}{r}5\\ \underline{2}\end{array}\ \begin{array}{r}10\\ \underline{6}\end{array}\ \begin{array}{r}15\\ \underline{9}\end{array}$, the pupil in each case repeating the familiar number combination 2 and 3 are 5, 6 and 4 are 10, 9 and 6 are 15, and placing the answer underneath. From this, as an understood jumping-off place, practice in the subtractive aspect of the remaining addition combinations may be proceeded with.

With direct-learning pupils the study of a new set of subtraction tables and the use of + and — signs are very confusing. The additive method should always be used, and if followed in two-and three-place subtraction questions, but little teaching difficulty is experienced.

Procedure in this case may be briefly summarized as follows:

$$(a)\ \begin{array}{r}10\\ \underline{6}\end{array}\quad (b)\ \begin{array}{r}8\\ \underline{5}\end{array}\quad (c)\ \begin{array}{r}14\\ \underline{9}\end{array}\quad (d)\ \begin{array}{r}97\\ \underline{62}\end{array}\quad (e)\ \begin{array}{r}15\\ \underline{9}\end{array}\quad (f)\ \begin{array}{r}25\\ \underline{9}\end{array}\quad (g)\ \begin{array}{r}35\\ \underline{9}\end{array}\quad (h)\ \begin{array}{r}45\\ \underline{29}\end{array}\quad (i)\ \begin{array}{r}85\\ \underline{39}\end{array}$$

(*a*) 6 and 4 are 10. (*b*) 5 and 3 are 8. (*c*) 9 and 5 are 14. (*d*) 2 and 5 are 7, 6 and 3 are 9, later abridged to 5, 3, 35. (*e*) 9 and 6 are 15. (*f*) 9 and 1 are 10, and 5 are 15, and 10 are 25, ans. 16; thence, 9 and 6 are 15, one to carry, 1 and 1 are 2. (*g*) 9 and 6 are 15, one to carry, 1 and 2 are 3. (*h*) 9 and 6 are 15, one to carry, 1 and 2 are 3, and 1 are 4. (*i*) 9 and 6 are 15, one to carry, 1 and 3 are 4, and 4 are 8.

In subtraction the placing of the answer line below the problem distinguishes it from addition procedure.

### *Group III*

Multiplication is introduced by bringing the pupil during several lessons in contact with problems which involve finding the value of 3 articles at 3 cents each, 5 at 5 cents, etc., the answer in each case being obtained by the process of addition. The saving in time which would result were a busy clerk to remember these answers, is discussed. Thus motivated, the pupils learn the first half-dozen multiplication combinations given in the Course of Study, Chapter IV. This method of introducing the topic enables pupils better to comprehend multiplication as a shortened form of addition. Later, when more involved problems are encountered, the teacher should make frequent use of additive methods of solution before abridging to multiplication procedure.

Multiplication tables are a source of great confusion to direct-learning pupils, who can neither appreciate the relations existing throughout a series, nor readily break up a table into its components when performing a multiplication operation. The tables as such should never be taught. The thirty-six combinations as given in the Course of Study, Chapter IV, should be taught in their given and inverted form as separate entities, by means of action games, floor drills, and practical problems, after much the same fashion as the addition combinations. The placing of the answer line below instead of above the combination and the use of different coloured chalks or crayons will serve to differentiate addition and multiplication processes during drill practices.

Measures of length and capacity will, of course, be taught by concrete methods and not by table learning. Considerable practice should be given in estimating as well as actually measuring quantities. Measures in conjunction with cost per unit and store play can be used to associate the process of multiplication with the activities of everyday life.

Direct-learning pupils tend to think in terms of imagery rather than words. For this reason the teacher will avoid formal solutions. When asked to find the cost of 6 gals. of vinegar at 23 cents a gal. no direct-learning child thinks according to the word formula 1 gal. of vinegar costs 23c., 6 gals. of vinegar costs 6 times 23 or $1.38. Rather he sees 6 gallons successively poured out, or 6 gallon jugs in a row each requiring the payment of 23 cents. His normal response is to put down six 23's and add them. As previously noted this response should be encouraged, and the multiplication process introduced later merely as an abridgment.

### *Group IV*

The whole course in this Group is essentially an extension of the multiplication process along various lines of everyday life. Numbers containing more than four digits should be avoided. *Oral* problems should form part of *every* lesson.

The teaching of square measure as a derivative of linear measure is practically an impossible task. But when taught as a measure in itself, no great difficulty is encountered. The teacher might give each pupil three rectangles of cardboard 1″x 1″, 2″x ½″, and 1⅓″x ¾″ and have him measure by covering and blocking a larger rectangle of cardboard 6″x 4″—"We are measuring flatness by a flat measure called a flat inch (later a square inch). The flat inch always contains the same amount of flatness but may be of any shape." Square inch areas in the form of circles, triangles, etc. should be drawn to illustrate the idea, and considerable time spent in estimating variously-shaped surfaces, and checking the estimates by blocking with a convenient square-inch unit. The square-foot and square-yard unit may be taught in like fashion.

When considerable proficiency has been attained in actually measuring and in estimating the area of surfaces, the class may measure half a dozen cardboard rectangles, say 2″x 3″, 2″x 4″, 3″x 4″, 3″x 5″, 4″x 5″, 2″x 5″. The result is marked on each rectangle, and the pupils will see that the number which tells how many inches long multiplied by the number which tells how many inches wide gives the number of square inches in each rectangle. That is, multiplication again is just an abbreviated way of counting or adding. As these pupils will be concerned with practical and never with higher mathematics, there is no reason for confusing them with involved word solutions concerning strips, area of strips and numbers of strips.

### *Group V*

Division is best introduced by a number of lessons which deal with the two forms as counting-out processes: "A man buys 28 cents' worth of matches at 4 cents a box. How many boxes?" Count out 28 cents in piles of four each. There are 7 four-cent piles, each of which will buy one box. "A man buys 7 boxes of matches for 28 cents. What does each cost?" Deal out 28 one-cent pieces one at a time among 7 piles. When the deal is completed, each pile contains 4 cents—the cost of a box. The attention of the pupil is drawn to the familiar multiplication combination in each case. After several such lessons, the counting-out process may be abridged by mental division. Short division operations in this group should never deal with larger than four place numbers, and the operation should initially, at least, be carried on by the long-division process.

Only pupils having an intelligence quotient approximating 70 can with *profit* be taught to carry on a long-division process involving two and three place numbers in the divisor.

As many of the pupils in this group are approaching the age of sixteen, the elements of everyday commercial arithmetic should be taught:

"A sign on a sporting goods store window reads: '20 cents off every dollar.' What does that mean?" "What will a fishing-rod bearing a ticket marked $3.00 cost?"

Various solutions will be offered—three 80's added, 80 multiplied by 3, 20 taken 3 times from 300, 60 taken from 300. All correct solutions should be accepted, and no fixed solution demanded from the class, though the several methods employed should be explained to the class by the teacher, and the pupils be encouraged to use abbreviated procedures. However, abridgments must not be forced on a pupil when there is danger of creating confusion. The form $\frac{80}{100}$ of $\frac{3.00}{1}$ should probably never be used.

The following will briefly summarize the continuation of the lesson and the two following lessons.

"Find the cost of a golf bag marked $7.00, a driver marked $4.50; a putter marked $3.25. The next building is a shoe-store whose window bears the sign '20% discount on all goods.' What does that mean? Find the cost of a pair of shoes marked $12.50, etc."

### *Group VI*

Pupils who have been duly admitted to this group, when not confused by formal solutions, are able to carry on with little real difficulty the simplified processes indicated on the Course of Study. Commercial practices and procedure can best be taught by dramatization. When possible, actual business forms should be obtained and used. Considerable attention should be devoted to personal and household budgeting.

## History

Teachers entering auxiliary training class work fresh from the grades sometimes find difficulty in conceiving history and geography as means rather than ends in education, as instruments to train children rather than as information to give children.

History and civics are taught in these classes largely with a view to building up right personal and social attitudes, somewhat with a view to developing out-turned interests and establishing contacts with the social world, very little with a view to imparting information, more especially that of a purely academic nature. Thus, in teaching the story of the discovery of America, it is of great importance that the pupils perceive how the glorious success of the enterprise was due to the perseverance of the man who said "Sail on and on and on," when all his companions wished to return. It is of considerable importance that the attention of the child is diverted from the call of his stomach, the irksome cramp of the school desk, the itching desire to run the streets, and centred for the time being beyond the range of mere personal want, there happily to develop new out-turned centres of interest and to establish new contacts with the world of affairs as found in books, newspapers, movies, sailors, ships, etc. It is of infinitely small importance that he know America was discovered in 1492 or that Columbus first landed on the island of San Salvador. Like the details of an arithmetic problem, historic facts are to be used and forgotten. No one cares to remember that John Smith purchased 3½ lb. of butter at 36 cents per pound, and 6¾ doz. eggs at 28 cents per dozen, but everyone desires the mathematical skill which may be developed through functioning that data.

### *Groups I and II*

The teacher should select such historic incidents and biographic sketches as may serve to develop regard for the moral virtues mentioned. The story should be told dramatically, and with deliberate intent to arouse and condition certain emotions. The children may re-tell it, dramatize it, or represent it by drawings, sand-table construction, or plasticine modelling.

Care should be taken to inculcate due regard for such social institutions as the child is likely to come in contact with. Many of these may, in the teacher's opinion, be marked by those imperfections which characterize all human achievement. It is to be hoped, however, that the solution of such problems of social readjustment as may arise will not be the task of graduates from auxiliary training classes. Their happiness and well-being will to a large extent depend upon their respect for and their conformity to the powers that be. The functions of the policemen, the judge, the hospital, etc., in the community should first be discussed with the class who then undertake the dramatization of the parts or their representation by drawing, sand-table construction, or plasticine modelling. For instance the policeman may be represented as managing traffic, directing strangers, protecting property, etc.

### *Groups III and IV*

The functions of the various social institutions mentioned may be taught as in the previous section. Hero-worship characters have been chosen more largely from Canadian history, with a view to the development of patriotic sentiments and the establishment of interest centres concerning personages with whom the pupil is likely to come in contact while reading, listening to addresses, watching movies, etc. Certain characters have been suggested, but the teacher must always feel free to substitute or extend.

Topics under industrial history can best be taught by means of a series of models, pictures, or blackboard drawings. Many interesting projects can be worked out by the pupils with plasticine or on the sand-table. In senior schools more especially, this phase of the work will be correlated with shop practice.

### *Groups V and VI*

Political institutions can best be taught by dramatic methods. Extensive and detailed analyses should be avoided. The teacher must bear in mind that, under a democratic system of government, graduates from auxiliary training classes will all have votes. Care should be taken as far as possible to help them to vote wisely. To this end the desirability of choosing men of good character should be emphasized.

The study of industrial and commercial institutions can well be correlated with corresponding topics in arithmetic. Dramatic methods of teaching may be employed. The necessity of always seeking good advice before entering into commercial transactions should be stressed, and sources from which such advice may be obtained should be specifically taught. Graduates from these classes are frequently victims of fraud.

A limited amount of Empire history may be taught, with a view to developing Empire patriotism.

## GEOGRAPHY AND NATURE STUDY

Many of the suggestions regarding purposes and methods to be pursued in the teaching of history are equally applicable to geography. Since, however, the latter subject deals with present existing conditions, while the former is concerned with situations which have passed beyond the range of actual experience, the information aspect is of greater import in the case of geography than of history. Knowledge to be taught must, nevertheless, be carefully chosen from the multitudinous array of facts presented by this subject. It is incumbent on the teacher to select such information as may have a practical bearing on the lives of her graduates.

Pupils in auxiliary training classes may move occasionally from house to house, rarely from city to city, and very infrequently from province to province. Interests as well as habitations tend to remain local. Hence the rivers of British Columbia are almost as foreign to the ken of an auxiliary training class child in Ontario as are the countries and capitals of South America, the gulfs and bays of Asia, or the mountains of the moon. The local aspects of grade courses require to be largely extended, the foreign aspects greatly curtailed.

Just as certain facts lie beyond the range of interest and of likely experience, certain methods of presentation lie beyond the range of apperception. Maps, for example, are highly abstract and symbolic representations. They might well be termed the algebra of geography. Maps of the locality and road maps may be built up from actual experiences of pupils, and may be developed through such intermediate stages as sand-table picturing and floor work construction. Presented after this fashion they are interpretable by direct-learning children. Other map work has little if any value.

### *Groups I and II*

Such topics as the market, sugar-making, island, lighthouse, etc., may be developed by means of the sand-table, and plasticine, or paper work construction. Should the teacher possess artistic ability, illustrative outlines may be sketched on the blackboard which the pupils complete with coloured crayons.

A useful sand-table can be made of five-ply wood 40″x 36″. Inch-square strips are screwed about the edges. The inside bottom is painted blue to represent water. The whole is then coated with spar varnish. Such a sand-table requires but little sand, can be used to represent scenes in perspective, and after use may be conveniently stored.

The making of geography story and picture books forms a very effective application exercise in these lessons. The pupils paste cut-out pictures, make crayon drawings, or use applique paper cut-outs to illustrate their accounts. The story writing may be correlated with composition; the sand-table, plasticine, and paper construction projects with manual training.

Observations, trips, pictures, and specimens are used to develop the nature study aspect of the programme.

### *Groups III and IV*

The introduction of local map study, by means of sand-table or floor work representation, affords an intermediate bridge between the actual scene and its map delineation. This transition stage helps the direct-learning pupil in his interpretation of the final abstract representation.

Floor work consists in building up the streets of the community with cardboard strips on the floor. As the picture develops, additional strips may be joined to the outline by means of paper-fasteners. Streets are named by sign-posts made of matches, fastened to the floor with plasticine, and holding in their split tops a cardboard rectangle upon which the name of the street has been printed. Important buildings are represented by mounted cut-out pictures or by books, chalk boxes, brushes, etc. Concomitantly with the development of the floor picture, a map is "grown" stage by stage on the blackboard, later to be copied by the pupils. An ordinary map of the community is then secured and studied to train pupils in its interpretation and to enable them to find their way about.

Children of the home and foreign lands are studied for the purpose of creating friendly sentiments and developing interest centres. These lessons may well proceed along the lines of concrete presentation and picture-story book application already indicated.

### *Groups V and VI*

Local highway maps may be taught in much the same fashion as local city maps. In this connection the children should be given practice in interpreting ordinary road signs. The pupils may travel a road drawn along the floor and read the signs displayed in split-match holders. Local railway and bus lines are taught in a similar manner.

The lessons on Canadian industrial geography have to do with a simplified study of processes rather than of map locations, the purpose being to create interest, foster patriotic and co-operative attitudes, and acquaint pupils with occupational possibilities. The making of sand-table pictures, the construction of wood and plasticine models, and the collection of illustrative pictures afford effective means of presentation. With more advanced pupils this work may be extended to include a study of the British Empire.

## MUSIC

Music appreciation and production, as distinct from theory and composition, would seem to bear but little correlation with the results of intelligence testing. Practically all children in auxiliary training classes can be taught to enjoy good music, and to respond gracefully in poise and movement to its rhythm. Many can be trained to sing or to play the simpler types of musical instruments. The introduction of music in the Course brightens the atmosphere of the room, makes automatic the pupils' response to discipline, and creates and develops interests which have moral value in the child's out-of-school and after-school life.

To gain interest and stimulate rhythmic response, allow the children to clap their hands in response to a rousing march. Accept whatever response they give spontaneously. Some may clap in time, some may not. To develop this raw response material, the teacher, without any suggestion of its being a pattern, introduces the regular pulsations of a 4/4 measure by clapping, inspiring as many as possible of the class to follow. It may take some pupils months to respond sympathetically.

When satisfactory progress has been made, the teacher suggests that the class stand and keep time by tapping their toes, and later, by stepping, walking, swinging the arms, and marching.

These movements are later associated with different measures and various note valuations. Later, phrase and cadence are interpreted by modifying and varying the intensities of response activities.

Senior pupils may make response by rhythmic drawings on the blackboard. Begin by allowing the pupil to make free response to 4/4 measure. Control is introduced by requiring him to make series of marks in lines and parallel rows, to construct squares and triangles, and later, to sketch figures and scenes.

Having pupils make their own instruments correlates music and manual training and inspires interest in the rhythmic orchestra. The first four pieces to be made by each child are:

1. Rhythm sticks—2 pieces of dowel ½″x 14″, one grooved.
2. Clappers—2 pieces of basswood ½″x 2″x 8″.
3. Sand-paper blocks—2 pieces of wood ½″x 3″x 5″. Tack sand-paper over one side of each piece. Rub together for action.
4. Rattles—Put rice, peas, beans, or wooden beads into cardboard match boxes. Glue the sides and insert and fasten a piece of dowel for a handle.

Always shellac or enamel the pieces to make them more attractive. With these instruments as a nucleus, the orchestra may get under way, beginning with a familiar song or record, such as "John Brown had a Little Indian."

1. Give a pair of sticks to each pupil. The teacher presents the pattern holding the plain stick in the right hand and the grooved stick in the left. The grooved stick is struck on the count of one and the plain stick slid over the grooved stick on the counts 2, 3 and 4.
2. Class use sticks for the verse, and rattles for the chorus.
3. Divide the class into two groups. Those with sticks play both verses and chorus. Those with rattles join in the chorus.
4. Divide the class into three groups. Those with rattles and those with blocks join in the chorus.

5. Choose one child to play the clappers.
6. Introduce other simple songs.

Other instruments may now be added:

1. Triangles—a horsehoe suspended by a string from a stick between two desks and struck with a long nail.

2. Drum—factory cotton is stretched over a wooden butter bowl, tacked in place, and given three coats of shellac. The drum-sticks are pieces of dowel ⅜″x12″ with large wooden beads slipped on the end and glued. Pad the bead with cotton and cover with a piece of an old kid glove.

3. Bells—cut a child's harness into sections containing three bells and tack to a wooden strip.

4. Clogs, cymbals, whistles, and tambourines may be purchased cheaply.

5. Xylophone—make a sounding board from half-inch basswood, 8″x27″. Taper it to 6″ at one end. From top to bottom following the line of the sides nail two one-inch strips. Cover the strips with felt from an old hat. Cut off 10½″ from a 2″ piece. Place this across the two strips, and tap with a drumstick. This note is "doh". Cut off a 10¼″ length, place and tap. If too flat for "re" shorten until that note is obtained. Continue with an increasingly shorter series of cross pieces until the scale can be sounded. Sandpaper each piece and set in order on the sounding-board. Drill a rather large hole in each end, and nail to place, taking care that the wood fits loosely about the nail. In a rhythm orchestra the drum-stick is brushed across the xylophone and no attempt is made to play the air.

Appreciation is taught in all classes:

1. By telling in words the story conveyed by the music.

2. By having the pupils perform or tell the actions suggested by the music.

3. By arranging a series of pictures to illustrate the story told by the music.

4. By having the children select pictures in turn which correspond to the story told by the music.

5. By having the pupils tell how the music makes them feel or what the music makes them imagine.

6. By a study with advanced pupils of the title, life of the composer, and story of the composition.

7. By using radio programmes to advise pupils concerning selections to which they should listen and by discussing these pieces the following day. Similar methods could be followed in case of musical entertainments.

In musical production it is sufficient to note that the usual methods of teaching singing can be followed with success. Where a harmonica band is organized in a senior boys' class, the *Hohner Harmonica Instruction Book* with the Harmonica in the Key of C can be used with advantage.

The teacher may make out scores on large sheets of cardboard. The children, after listening to a selection, should be able to offer suggestions. The following sample score is given:

| | | | | |
|---|---|---|---|---|
| $\frac{4}{4}$ | S x x x<br>Cl. ———<br>Δ o o o | S x x x<br>Cl. ———<br>Δ o o o | S x x x<br>Cl. ———<br>Δ o o o | S x x x<br>Cl. ———<br>Δ o o o |
| | S x x x<br>B ———<br>Δ o o o | S x x x<br>B ———<br>Δ o o o | S x x x<br>B ———<br>Δ o o o | S o o o<br>B o o o<br>Δ o o o |
| | T T T T<br>Cyl. o o o | T ———<br>Cyl. o o o<br>WB WB WB WB | T T T T<br>Cyl. o o o | T T T T<br>Cyl. o o o<br>WB WB WB WB |
| | T T T T<br>Cl. ———<br>Δ o o o<br>WB WB WB WB | T ———<br>Cl. Cl. Cl. Cl.<br>Cyl. o o o<br>WB WB WB WB | T ———<br>Cl. ———<br>Δ o o o<br>WB WB WB WB | T o o o<br>Cl. o o o<br>Cyl. o o o<br>WB o o o |

Sticks—S, hit; x, slide.
Clogs—Cl., hit; ——— shake.
Bells—B.
Cymbal—Cyl.
Triangle—Δ
Tambourine—T, upright; ⊥ inverted; ——— shake.
Blocks—W.B.

## CHAPTER VII

# DRILL LESSONS AND SEAT-WORK

THE teacher should clearly distinguish between learning which is to be habitualized and learning which is to be rendered a conscious process. The purpose of teaching in case of the first-named is the formation of fixed, unvaried, automatic, immediate responses; in the case of the latter the production and control of vivid imagery and clear conceptions.

Habitualization consists in abridging or eliminating intermediate processes between perception and response. Thus the pupil should be trained to make the immediate response "seven" to the number situation $\begin{smallmatrix}\overline{3}\\4\end{smallmatrix}$ or the immediate response, "*table*" to the word-recognition situation, table. A vivid recall of the counting process in case of the former, or of the phonic process in case of the latter is not desirable.

It is equally undesirable that the pupil should "learn by heart," "memorize notes on," or otherwise habitualize the story of the discovery of America, the solution of a loss and gain problem in arithmetic, or the definition of a lake. Here the teacher's purpose is not to habitualize learning by eliminating a remembrance of the learning experience. Quite the contrary. Her purpose now is to give the pupil power to recall fully, vividly, and distinctly imagery and conceptions built up during the learning process, in order that he may adjust behaviour to the requirements of practical situations.

For instance, if invited to summer at a boys' camp, ability to repeat the definition of a lake would avail the pupil little in making preparation for his vacation. But ability to recall boating, bathing, and fishing scenes would prompt him to invest in a bathing suit and a fishing-rod.

Briefly, we habitualize learning when we wish to eliminate thinking and visualizing processes, when we want to "get there" without having to remember "how we get there." Learning is taught as a conscious, remembering process when "how we get there" is likely to be a matter of prime importance, when we may have to choose among several pathways or to discover a new road to a desired end.

Habitualization is concerned with such lessons as addition and multiplication combinations, word-recognition, use of correct English, writing, spelling, routine schoolroom discipline, etc. The process may be divided into three stages: (1) a vivid concrete presentation requiring the pupil to think out the proper response to a particular situation, (2) series of drill practices which tend to abridge or eliminate the thinking-out process, so that response is made immediately upon perception of the given situation, (3) a series of application practices in which the specific situation is variously associated with other situations and the pupil is given practice in detecting when and where response should be made.

Certain general methods of procedure are applicable to drill lessons:

1. A newly-acquired response must be frequently drilled to make it automatic.
2. Drill lessons should be short and snappy, as considerable energy is required to make and establish "cut-offs."
3. Drills should be graded, beginning with those which are slow and certain, and ending with those requiring the maximum rapidity of response.
4. The "setting" of the given situation must be frequently changed to maintain interest. The setting is usually known as a device.

For convenience the following habitualization devices have been arranged in two groups: (1) Recognition drills which have to do with responses made to simple single situations—naming number pictures, word-recognition, etc. (2) Relation drills which have to do with responses made to more complex situations—number pictures and symbols, addition and multiplications, combinations, phonic syntheses, etc. The treatment of each section begins with one or more type lessons outlining the method of presenting a new element, followed by general drill devices to be used during subsequent lessons in establishing the habit. The devices have been arranged in order of increasing rapidity.

## RECOGNITION DRILLS

### A. Type Lesson—Number Picture ⁙

1. The number picture ∷ is reviewed and compared to the four corners of the table.

2. "We shall place a flower pot (thus ⁙) in the centre of the table. Count the number of dots."—"The flower-pot number picture is five."

3. The children make the number picture five on the table with blocks, chestnuts, beads, etc.

4. The children represent on the blackboard the new number picture with stars, apples, mittens, moons, chairs, etc.

5. *Flash Card Drill.* Cards bearing various number pictures including that of five are shown in turn. The children identify the new number picture when it is exhibited.

6. *Pond and Fish Drill.* Cut-out paper fish bearing various number pictures including those of five are placed in a pond represented by a sand-table tray. The children catch and name all the new fish.

7. *Horses and Stalls Drill.* The blackboard is divided by vertical lines into ten stalls. The four pupils in the group line up facing away from the blackboard. Ten flash card number pictures including four of the number picture five are placed along the ledge one in each stall. At a clap of the teacher's hands the group turn, and each runs to a stall named by the new number picture. The group re-line, the teacher rearranges the flash cards, and the race is repeated.

8. *Chair Race Drill.* Seven chairs are placed in line with their backs against the wall. The four pupils in the recitation group are lined up facing away from the chairs. Seven flash card number pictures including four of the number picture five are placed face down upon the chairs. At a clap of the teacher's hands the group turn, run to chairs and seat themselves as

each finds a chair bearing the new number picture. The group then re-line, the teacher rearranges the flash cards, and the game is repeated.

### B. General Drills

1. *Birthday Party Drill.* Flash cards bearing recently-taught forms are distributed among the pupils of the group, each child receiving from one to three. Mary, a member of the group, is giving a birthday party. She stands by the desk, welcomes each guest in turn, receives his gift or gifts, and returns thanks for the same. The guests acknowledge her welcome, and name their gifts as these are bestowed—"I have brought you five apples for your birthday," etc.

2. *Guess Drill.* A number of recently-taught forms are represented on the blackboard and reviewed. One child leaves the room or has his vision darkened by the teacher's hands. A second child selects one of the forms on the blackboard. The first child is given three guesses to discover the form chosen. He points to one on the blackboard saying, "Is it (chair)?" The group reply, "It is (chair)," or "It is not (chair)." Should the contestant fail to correctly name a form which he points out, or should he fail to discover the selected form within three guesses, the chooser takes his place. Should he, however, be successful, he continues his innings, another pupil taking the place of the chooser.

3. *Changing Places Drill.* Flash cards bearing recently-taught forms are distributed among the pupils of the group, who then stand in a circle each holding a flash card outward. The teacher says "Six change places with four," or "Chair change places with table." After a time, flash cards are exchanged, and the game is repeated.

4. *Finding a Home Drill.* The group are seated in a circle, there being one fewer chairs than children. Mary, a member of the group, is "it." The teacher says, "Mary, find a home." Mary steps behind one of the chairs. The teacher exposes a flash card. If the seated child correctly recognizes the form

exhibited, Mary steps behind another chair. Mary secures a seat when she corrects a mistaken recognition, and the defaulter becomes "it."

5. *Photo-taking Drill.* The camera, an empty, uncovered chalk box with a hole in the bottom, is placed on the desk. A photographer is chosen from the group. Standing with his back to the group and his eye to the hole in the chalk box, he names the flash card pictures which the teacher successively presents before the camera. Should he make an error the member of the group first correcting the mistake becomes photographer.

6. *Market Drill.* Flash cards bearing words or number pictures are placed on the table or along the blackboard ledge. The teacher and group go to market. The teacher says, "Mary, buy chair," or "Mary, buy five." The children in turn make purchases until the market has been exhausted.

7. *Cubes Drill.* The faces of three inch cubes are marked with number pictures or number symbols. The teacher rolls one of the cubes on the table, and a child is called upon to name the exposed form.

or

In a group of six or eight two teams are chosen and lined up on opposite sides of a table. The "out" team is given possession of the cube. Each member in turn rolls the cube on the table, the member of the "in" team opposite him naming the form exposed. Each errorless sequence made by the "in" team counts one run. Should a member of the "in" team make a recognition mistake which is corrected by his opponent the cube changes possession and the "outs" go "in."

8. *Running Bases Drill.* The four bases of a miniature diamond are each marked by a paper sheet bearing a recognition form. The pupils in turn try to make home runs, naming each recognition form as it is trodden upon.

9. *Postie Drill.* Flash cards bearing recognition forms placed in a row along one side of the table, before which the group have been lined up. Postie, at first the teacher, later a

pupil, points to a card, calls upon a child by name, and raps thrice. If the child called upon answers the door correctly before the postman completes his knock, he in turn becomes postie. The drill may be speeded up by having postie call upon the child before pointing to the card.

10. *Hop-Scotch Drill.* A hop-scotch pattern is chalked upon the floor. In each enclosure is placed a sheet of paper bearing a recognition form. The pupils in turn traverse the pattern, naming each recognition form as it is trodden upon. The sheets are then shuffled and the game is repeated.

11. *Walk the Fence Drill.* A dozen sheets of paper, each bearing a recognition form, are placed in a line which represents the top of a fence. Pupils in turn walk or run along the top of the fence, naming each recognition form as it is trodden upon. The number of seconds taken by each contestant is recorded by the teacher on the board. Should a contestant fall off the fence by making a recognition error, he receives a blank score. The sheets are shuffled and the game is repeated, the children endeavouring to cut down their time.

12. *Conductor Drill.* Flash cards bearing recognition forms are placed along the ledge of the blackboard to represent stations. Members of the group in turn play conductor, walking or running beside the ledge, and naming the stations as they are passed.

The time taken by the train to make the trip is recorded by the teacher on the board. Should a train run off the track, its conductor receives no time. The cards are then re-arranged, and the game is repeated, each conductor endeavouring to establish a record trip.

## RELATION DRILLS

### A. Type Lesson—Phonogram "at"

1. Several words containing the phonogram are analysed, and the sound isolated is abstracted and written on the blackboard according to the usual procedure.

2. The children overcoat with coloured crayon the new sound as it appears in several of a number of words written on the blackboard.

3. *Mice Drill.* The children are mice asleep with their heads on their desks. The teacher represents the cat, and says over a list of words. The mice lift their heads when they hear the new sound.

4. *Think Drill.* The teacher says, "Think of the name of something at home whose name contains the new sound."

5. *Target Practice Drill.* Targets are drawn on the blackboard each with a consonant printed to its left centre. The children are given cards bearing the new sound. Each shoots in turn, planting his bullet in the centre of the target and naming the word formed.

### B. General Relation Drills

1. *Postmaster Drill.* Post boxes are drawn on the blackboard just above the ledge. On each box is printed: (1) a number picture, (2) an addition or multiplication combination, (3) thing or action picture, (4) name of an animal, etc., according to the nature of the learning to be drilled. The children are given cards each bearing a respectively corresponding: (1) number symbol, (2) answer, (3) noun or verb, or phonic symbol, (4) predicate, etc. The teacher first, later a pupil, acts as postmaster. The pupils in turn advance and inquire, "Please, Mr. Postmaster, may I mail this letter?" "Be sure to put it in the right box," the postmaster replies. The pupil places his card on the ledge before the corresponding box.

2. *Guess Drill.* Several addition or multiplication combinations are written on the blackboard and reviewed. The answers are then erased, and the drill proceeds as described in section I. B. 2, the contestant repeating in each case the entire story, "Is it 7 and 6 are 13?" etc.

3. *Partners Drill.* The children are divided into two groups. The members of the first group are given cards bearing one relation form, and the members of the second group cards bearing the corresponding relation form. The teacher says, "Find your partners." Cards are exchanged within each group, and the game is repeated.

4. *Horses in Stalls Drill.* The blackboard is divided by vertical lines into a number of stalls. (1) Number pictures, (2) addition or multiplication combinations, (3) words or phrases, (4) words, (5) sentence subjects, etc., are written on the stalls. The children are given cards bearing corresponding: (1) symbols, (2) answers, (3) pictures, (4) initial phonics, (5) predicates, etc. After a brief placement practice, the children line up and face away from the board, the teacher redistributes the cards, and a race to find the correct stall follows a clap of the teacher's hands.

5. *Helpers' Drill.* The children are given cards bearing addition or multiplication combinations. One child comes to the front and faces the class. The teacher standing behind holds an answer card above the child's head and says to the class, "Who will help Mary tell what is on the card above her head?" The child holding the card with the corresponding combination, for example, $\overline{\substack{6\\7}}$, shows it to Mary, who thereupon replies, "Is it 13?" The game continues until Mary makes an error, whereupon the helper takes her place.

6. *Finding a Home Drill.* This is played as in the recognition game of that name, save that the teacher exposes a number-combination card, and the seated child is required to give the correct answer.

7. *Auto Race Drill.* This may be used effectively in drilling addition or subtraction extension tables, as well as in habitualizing other forms of relations. The teacher writes at intervals along the blackboard above the ledge a row of two-place numbers having the same units digit. Each pupil in turn takes a flash card bearing the digit being drilled upon in relation to the first-named digit, and runs it along the ledge just below the row of two-place numbers. As he passes the card beneath each of the two-place numbers, he states the sum or difference as the case may be. Time scores may be kept as suggested in other races.

8. *Cubes Drill.* Digits are printed on the faces of two cubes, and the game is played as in the recognition drill of the same name, the "in" side player stating the sum or product of the numbers on the exposed faces of the cubes which his opponent has rolled upon the table.

9. 10. 11. 12. 13. *Postie, Running Bases, Hop-Scotch, Walking the Fence, and Conductor Drills* are played as in the recognition games of those names, save that addition or multiplication combinations are here used and the contestants are required to state sums or products.

### SEAT-WORK

In an ungraded room containing several groups, much of the learning process is necessarily carried on through the medium of seat-work. Less than one-quarter of the pupil's time in an ordinary auxiliary training class is spent in recitation. Yet, even more than grade children, this pupil stands in need of teacher guidance. Unless three-quarters of his day is to be profitlessly employed, the teacher, while personally engaged with other groups, must find means of impersonally directing his activities. This she is able to accomplish only by extending and expressing supervisory training methods in terms of seat-work.

The planning of an adequate seat-work lesson is a much harder task than the planning of a recitation. In the latter the pupil's difficulties crop up as the lesson proceeds. In the former they must be foreseen and forestalled. Unless the teacher is prepared to devote very considerable time and attention to the orderly organization of her work, one or more of the following situations is sure to arise:

1. Seat-work may degenerate into mere busy work, whose purpose is less to teach the pupil than to keep him out of mischief.

2. Seat-work may take the form of monotonous drill exercises, to the disgust of the pupil, the waste of his time, and the failure to establish correct habitualizations. A good example is to be seen where, morning after morning, a teacher covers the blackboard with lengthy addition questions. The class grows restless, no new learning is accomplished, and habits of counting rather than of adding are likely to become firmly entrenched.

3. Scantily-considered seat-work may involve the pupil in difficulties whose event was unforeseen at the time of assignment, or for whose occurrence no adequate preparation was made

in the form of proper explanations, the provision of suitable references, or the introduction of intermediate problem steps. Either the work is not accomplished, or the recitation period of the floor group is continually interrupted by questions from pupils at their seats.

4. The assignment may require lengthy answers. These the teacher may have no opportunity to correct, with the result that pupils fall into slovenly habits of work. Or correction may take place during the brief and valuable time allotted for recitation purposes, with the result that little new teaching is accomplished.

Many valuable suggestions regarding seat-work are to be found in various work books and devices published by several Canadian firms. Where rigid economy is not a major object, these productions can often be used with advantage in the class. There is always the danger, however, that the teacher may take for granted that the series of exercises as given will articulate with the special needs of the group. This assumption is likely to prove fallacious since no set of assignments, however carefully arranged and graded, can hope to fit in with all existing situations or to supplant the necessity of careful guidance and direction on the part of the teacher.

It is likewise noticeable that seat-work prepared by the teacher is put to more effective use than that devised by some one outside the situation. In evolving and constructing devices, she is likely to become more fully cognizant of their purpose and function. Nor does the task involve as much labour as at first sight would appear. The teacher who gives her construction permanency of form and stores the material for future occasions soon has an ample fund of supplies. Moreover, it is the teacher who finds pleasure in creating new designs and new activities who finds joy in her profession.

The following is an attempt to analyse the various types of seat-work now in vogue. The analysis has been presented in the form of concrete examples rather than of general statements.

## ARITHMETIC

### A. Number Picture Four

1. Draw a tree with four branches. Put four green leaves on each branch. Put four red apples on each branch.

2. Make four tables on the peg board, using four green pegs at the top, four red pegs at the bottom, four blue pegs at one side, four yellow pegs at the other side.

3. Make a plasticine table having four sides. Set the table with four round paper plates. Place four plasticine chairs at the table.

4. Draw a house having four windows and four panes in each window.

5. Build a wall with four blocks. Grow four trees on one side of the wall and four on the other, using splints and plasticine.

### B. Symbols and Number Pictures

1. Sew four stars one in each corner of the card and the figure 4 drawn in the centre.

2. Make four apples of plasticine. Make the figure 4 of plasticine, and place it in the centre of the group.

3. The figure 4 is a swallow standing on one leg. Draw four such swallows on a telegraph line.

4. Grow four flowers each having four petals (leaves) on the figure 4.

5. Cut out of paper the figure 4. Place it on the centre of the peg board. Put four green soldiers in one corner, four red in another, four blue in another, and four yellow in the remainder to guard the figure.

6. General review. Small domino cards and cards bearing corresponding number symbols are placed in an envelope to be matched by the pupil on his desk.

7. Flash cards bearing number symbols may be arranged by the pupil along the ledge beneath corresponding domino forms drawn on the blackboard.

### C. Combinations, Addition or Multiplication

Excessive seat-work on these topics during the habitualization period, especially in case of pupils who come from grade with firmly established "counting" and "table-repeating" habits, is likely to retard rather than advance the learning process.

1. Sets of four punch boards may be constructed of cardboard 12″x 12″, for reviewing each of addition, subtraction, or multiplication combinations. The figures may be made in black for addition and the answers written above, red for subtraction and the answers written below, blue or green for multiplication with the answers below. The answers are then cut out with an inch punch, and those from each board are placed

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2 | 4 | 6 | 8 | 10 | 3 | 4 | 5 | 5 |
| 1 | 2 | 3 | 4 | 5 | 1 | 3 | 1 | 2 |
| 1 | 2 | 3 | 4 | 5 | 2 | 1 | 4 | 3 |
| 6 | 6 | 7 | 7 | 7 | 8 | 8 | 8 | 7 |
| 5 | 4 | 1 | 3 | 5 | 1 | 5 | 2 | 6 |
| 1 | 2 | 6 | 4 | 2 | 7 | 3 | 6 | 1 |
| 3 | 7 | 4 | 7 | 5 | 8 | 5 | 8 | 6 |
| 2 | 4 | 1 | 2 | 4 | 7 | 3 | 3 | 1 |
| 1 | 3 | 3 | 5 | 1 | 1 | 2 | 5 | 5 |
| 8 | 6 | 8 | 6 | 7 | 5 | 8 | 7 | 8 |
| 6 | 2 | 5 | 4 | 3 | 2 | 5 | 5 | 6 |
| 2 | 4 | 3 | 2 | 4 | 3 | 3 | 2 | 2 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9 | 9 | 9 | 9 | 10 | 10 | 10 | 10 | 9 |
| 1 | 5 | 3 | 7 | 1 | 7 | 2 | 6 | 8 |
| 8 | 4 | 6 | 2 | 9 | 3 | 8 | 4 | 1 |
| 10 | 9 | 10 | 9 | 10 | 9 | 10 | 5 | 9 |
| 9 | 4 | 3 | 6 | 8 | 2 | 4 | 2 | 5 |
| 1 | 5 | 7 | 3 | 2 | 7 | 6 | 3 | 4 |
| 6 | 9 | 7 | 8 | 7 | 10 | 8 | 10 | 8 |
| 4 | 6 | 3 | 7 | 2 | 7 | 5 | 7 | 6 |
| 2 | 3 | 4 | 2 | 5 | 3 | 3 | 2 | 2 |
| 10 | 9 | 10 | 9 | 10 | 9 | 10 | 6 | 8 |
| 4 | 4 | 3 | 3 | 2 | 2 | 6 | 3 | 4 |
| 6 | 5 | 7 | 6 | 8 | 7 | 4 | 3 | 4 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 12 | 14 | 16 | 18 | 11 | 11 | 11 | 11 | 12 |
| 6 | 7 | 8 | 9 | 2 | 4 | 6 | 8 | 9 |
| 6 | 7 | 8 | 9 | 9 | 7 | 5 | 3 | 3 |
| 12 | 12 | 13 | 11 | 12 | 11 | 14 | 12 | 16 |
| 8 | 5 | 4 | 5 | 6 | 3 | 7 | 3 | 8 |
| 4 | 7 | 9 | 6 | 6 | 8 | 7 | 9 | 8 |
| 12 | 18 | 12 | 11 | 13 | 11 | 8 | 11 | 12 |
| 4 | 9 | 7 | 9 | 9 | 7 | 3 | 4 | 5 |
| 8 | 9 | 5 | 2 | 4 | 4 | 5 | 7 | 7 |
| 9 | 12 | 9 | 12 | 10 | 11 | 10 | 11 | 13 |
| 4 | 8 | 6 | 9 | 3 | 8 | 4 | 5 | 9 |
| 5 | 4 | 3 | 3 | 7 | 3 | 6 | 6 | 4 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 13 | 13 | 14 | 14 | 15 | 15 | 16 | 17 | 13 |
| 8 | 6 | 5 | 8 | 6 | 7 | 9 | 8 | 5 |
| 5 | 7 | 9 | 6 | 9 | 8 | 7 | 9 | 8 |
| 15 | 13 | 15 | 14 | 16 | 14 | 17 | 12 | 12 |
| 9 | 7 | 8 | 9 | 7 | 6 | 9 | 6 | 5 |
| 6 | 6 | 7 | 5 | 9 | 8 | 8 | 6 | 7 |
| 14 | 13 | 16 | 13 | 18 | 13 | 11 | 14 | 11 |
| 7 | 4 | 8 | 8 | 9 | 6 | 2 | 5 | 4 |
| 7 | 9 | 8 | 5 | 9 | 7 | 9 | 9 | 7 |
| 14 | 11 | 15 | 11 | 15 | 12 | 16 | 12 | 17 |
| 8 | 6 | 9 | 8 | 7 | 9 | 9 | 8 | 8 |
| 6 | 5 | 6 | 3 | 8 | 3 | 7 | 4 | 9 |

in a separate envelope. The preceding set, organized on a need-frequency basis, is suggested for addition or subtraction drill, according as the upper or lower figures are cut out for answers. The two lower rows in each line may be repeated for multiplication drill, the answers in that case being placed beneath.

This seat-work device may be varied by placing a sheet of paper beneath the board and writing the answers on the spaces exposed by the punched-out discs.

2. With a senior group of four or more pupils who are backward in multiplication combinations, the game "Lotto" may be played. Cardboard squares 9″x 9″ are ruled into 81 spaces. On the leader's card the multiplication tables are written in order on the small squares. On the players' cards the corresponding answers are inserted. The leader is supplied with an envelope containing 81 inch squares formed by cutting into small sections a second leader's card. The players are supplied with envelopes containing 20 coloured inch squares. In playing the game the leader draws an inch square from his envelope, states the combination written upon it, and places it on the section of his card containing the same combination, repeating the process until 20 such squares have been drawn and placed. The players are required each time to place a coloured square on the section of their players' card containing the answer to the combination called out. At the conclusion of the drawing the leader checks up the card of each player. Those having perfect placements tally a score of 20; those having 19 correct, a score of 19, etc. After each of the pupils has acted in turn as leader the scores are added and the winner is declared.

3. Cardboard sheets, the same length as, and one inch more than double the width of school exercise paper, are prepared. Addition, subtraction, multiplication, or short-division questions, according to the achievement of the group concerned, are made out on both outside folds, and corresponding rectangular sections are cut out above or below each problem for the placement of answers. Exercises should not be crowded, and questions should be numerous and brief rather than few and lengthy. Care should be taken in the making to see that cut-out sections for

answers in the two folds do not correspond, otherwise difficulty will be experienced by the pupils in recording results. For convenience in scoring, answers may be marked on the inside of both folds. Where pupils are to do the scoring it is desirable that the answer series be laterally inverted to the question series on the opposite side of the fold, so that both may read from left to right. To use, place an exercise paper inside each booklet and fasten the outer edges with a paper clip. It is usually better to impose a time limit and score the number attempted and the number correct, in which case results should be recorded from day to day, and the pupils should be urged to improve both their speed and accuracy.

### D. PROBLEMS

1. On cardboard rectangles, approximately 8″x 6″, from four to nine small cut-out pictures may be pasted or drawings of articles made. Groups shown should be selected on a basis of similarity—vegetables, kitchenware, bedroom furniture, carpenter's tools, clothing, tableware, etc. The price of each article is plainly written beneath, and varies from values represented by one digit on cards for junior children to values represented by from two- to four-place numbers on cards for senior pupils.

These cards may be used in several ways:

(1) *Addition.* Six cards are given to every pupil of the group, who is asked to find the total value represented on each card.

(2) *Subtraction.* One card is given every pupil of the group, who is asked to find the change from a payment of 10c., 25c., $1.00, $10.00, etc., in the case of each article.

(3) *Multiplication and Addition.* One card is given every pupil of the group who is asked to find the total value of say six of each article represented on the card.

(4) *Division.* One card is given every pupil of the group who is asked to find the number of each of the represented articles which may be purchased by $1.00, $2.40, $13.25, etc., as the case may be.

(5) *Discount.* In case the articles are valued in dollars, dollars and halves, or dollars and quarters, one card may be

given to every pupil of the group, who is asked to find the individual and total costs on a day when the merchant is giving "20 cents off on every dollar," etc.

2. Cardboard folders may be prepared as described in section C. 3, and a series of graded and related problems made out on each outside cover. Oblong sections are cut out for answer placement, and the device used as previously described. Frequently a new topic may be taught through the working of a series of well-graded problems, as for example simple interest:

(1) Find the rent of 4 houses at $10 per house per month for 6 months.

(2) Find the rent of 8 trucks at $7 per truck per week for 12 weeks.

(3) Find the rent of 12 acres of land at $3.00 per acre per year for 5 years.

(4) Find the rent of 600 dollars at 3c. per dollar per year for 2 years.

(5) Find the rent of $450 at 4c. per dollar per year for 3 years.

(6) Find the interest, which is a name for money rent, on $800 at 5c. per dollar per year for 4 years.

## READING

### A. New Word Exercises

The teacher writes the new word on a sheet of paper for each child in the group. The children may: (1) overcoat the word with coloured crayons, (2) cover the word with plasticine rolls, (3) cut out the word, (4) sew the word, (5) cover the word with drawings of small flowers, (6) make the word several times with letter builders.

### B. Direction Exercises

1. Cardboard sheets are prepared by drawing in simple outline five objects at the top of the sheet, for example: leaf, flower, tree, orange, apple, and printing the name of each object beneath it. Below the named illustrations are five directions which the pupils carry out on exercise paper:

Draw a flower.
Draw an apple, etc.

2. Similar sheets (with illustrations and names when new words are to be taught, without illustrations and names for review work) bearing such directions as:

Draw an apple
Colour the apple red.
Draw a flower.
Colour the flower blue, etc.

*Or:* Draw an apple.
Draw a flower, etc., followed by—
Colour the apple red.
Colour the flower blue, etc.

3. Similar sheets (with illustrations and names when new words are to be taught, without illustrations and names for review work) bearing such directions as:

Draw an apple.
Colour the apple red.
Cut out the apple.
Draw a flower.
Colour the flower blue.
Cut out the flower, etc., followed by—
Place the flower on the tree.
Place the apple under the tree.
Place the orange by the apple, etc.

4. Similar sheets bearing such directions as:

Make a table of plasticine.
Make a cup of plasticine, etc., followed by—
Place the cup and plate on the table.
Place the chair by the table.
Place the spoon in the cup.

### C. MATCHING EXERCISES

1. A punch board may be prepared of 12″x 8″ cardboard. Pictures of objects, pictures of action verbs or pictures significant of several prepositions may be pasted or drawn on one side of the board. For example, man on box, man in box, man under box, etc. The names of the objects, action verbs or prepositions, are printed beneath the pictures representing them. The words are then cut out with an inch punch, and repeated in print on the opposite side of each disc. The discs are placed in an envelope to be given out with the punch board as seat-work.

2. Pictures of: (1) objects, (2) action verbs, (3) prepositional relations, (4) scenes, (5) or activities may be drawn or cut out and pasted on small cardboard oblongs. On other cardboard tags may be written on one side and printed on the other the corresponding (1) noun, (2) verb, (3) preposition or prepositional phrase, (4) sentence descriptive of the scene, (5) short story descriptive of the activity. Several pictures are placed in an envelope, together with their corresponding verbal representations, to be taken out and matched on his desk by the child.

3. Each of the several series of pictures described in the previous section may be represented on separate cardboard oblongs 12″x 9″, which are punched and eyeleted near the bottom and near the top. Tags containing verbal representations of the pictures as described in the previous section are prepared, punched, and eyeleted near one end. Tags having to do with a series of pictures are fastened to the bottom eyelet of the cardboard containing the series by means of strings fifteen inches long. The children are given the cards and required to place the tags beneath the corresponding pictures. The upper eyeleted hole in the card may be used to suspend the device from a nail when not in use.

4. Cardboard tags upon which have been written subject-predicate statements, such as "Birds fly," "Fish swim," "Dogs bark," etc., or simple assertions, such as "The sky is blue," "Snow is cold," "Apples are round," etc., are cut in two and placed a dozen a set in envelopes. The corresponding halves in each envelope are matched by the pupil at his seat.

### D. ARRANGEMENTS EXERCISES

1. On three long cardboard tags are written in red ink, "Things found in the kitchen," "Things found in the sitting-room," "Things found in the bedroom." On smaller tags are written in black ink the names of six or ten articles corresponding to the classification designated on the longer tags, "frying-pan, dish-cloth, kettle," etc.; "sofa, book, radio," etc.; "bed, pillow, towel," etc. The pupil, on receiving the envelope containing

the tags, places the three longer ones at the top of his desk, and arranges the smaller ones beneath their proper headings.

Various other systems of classification readily lend themselves to similar use:

What mother uses when sewing.
What mother uses when baking.
What mother uses when washing.

Things found in a grocery.
Things found in a dry-goods store.
Things found in a hardware store, etc.

2. An exercise similar to number one may be prepared by pasting three pictures on small cardboard oblongs and writing the names of things seen in the three pictures on separate tags. The same proceedings are followed save that the pictures are used in place of the classes designated in red ink in the first exercise.

3. A more difficult variation of number two consists in writing statements concerning each picture on separate tags.

4. A still more difficult variation consists in writing sentence-a-line stories about the pictures, each story comprehending several sentences, and each sentence being written on a separate tag.

5. The stories may be written as described in number four, and the pupil required to place the sentence tags in order without aid from the three pictures.

### E. Completion Exercises

1. On a cardboard sheet ten sentence-a-line statements are written, with a word or phrase missing from each. The missing forms are written on small tags and placed in an envelope. The pupil is required to complete each statement by placing in the blank space the tag containing the missing word or phrase.

2. Number one may be varied by writing a ten-line story containing missing words or phrases based upon a picture pasted at the top of the cardboard.

3. Ten interrogations requiring a word or phrase for an answer may be written on a cardboard sheet. The questions

may be of a general nature, such as "Where do fish live?" "Where do cows live?" etc. Or they may be based upon a picture pasted at the top of the cardboard sheet. The word or phrase answers are written on cardboard tags and placed in an envelope. The pupil is required to place after each interrogation the tag bearing its proper answer.

### F. Combination Exercise

Two identical pictures are pasted on the opposite sides of a sheet of cardboard. In significant places on one picture the names of ten objects, ten action verbs, or ten descriptive phrases or combinations of the three are written in white ink if necessary. The same words or phrases are written on small cardboard tags and placed in an envelope.

On a second cardboard sheet a ten-line story about the picture is written. The ten words or phrases written on the tags should be included in the composition of the story, but their places left blank in the actual write-up. On the opposite side of the second sheet are written ten interrogations, each requiring one of the words or phrases on the cardboard tags as an answer.

Exercise 1. The pupil places the cardboard tags on their identical forms as written on the first picture.
Exercise 2. The pupil places the tags on their significant places in the second picture.
Exercise 3. The pupil places the tags in their proper blanks in the story.
Exercise 4. The pupil places the tags after their appropriate interrogations on the opposite side of the second sheet.

While considerable effort and ingenuity are required to develop such a combination exercise, its effectiveness more than repays the labour involved.

Undoubtedly the best method of developing reading after a child has made a start is to give him plenty of practice with interesting reading material. To this end the room should be supplied with a number of individual supplementary readers suited to the various groups. Small, cheap, limp-covered books containing one or several short stories are most effective. By cutting out child stories, child verse, and simple descriptive articles from magazines and newspapers and pasting these on cardboard sheets of uniform size the teacher can, at small trouble and expense, considerably extend her supplementary library. All supplementary reading of whatever nature should be arranged separately according to groups, and placed in a convenient place or convenient places in the room easy of access to students who have completed assigned seat-work.

## HISTORY AND GEOGRAPHY

1. Well-trained pupils in senior groups are quite capable of writing narrative accounts of geographic and historic incidents. For such the building up of story books is recommended as desirable seat-work projects. The books themselves may be constructed during manual training periods, thereby affording a correlation of academic and hand work. The stories should be rather profusely illustrated with crayon sketches or cut-out pictures. In junior groups the written element may be omitted, and the pictorial element enlarged.

2. Direct-learning pupils find sand-table constructions superior to written compositions, not only for the expression, but likewise the development of ideas. An effective type of sand-table for auxiliary training and promotion classes has been described in Chapter VI. Methods of carrying out sand-table projects in geography are outlined and illustrated in *Play Story Geography*, published by Gage and Co., Toronto, a book for Groups 1, 2, and 3, and *Canadian Neighbours*, published by The Ryerson Press, Toronto, a book for groups 5 and 6. Surprisingly good sand-table pictures of local scenes such as "Fort William Harbour," "Toronto Waterfront," "Burlington Bay," "Ambassador Bridge," or "Niagara Falls" can be designed by pupils of these classes.

Historic incidents likewise lend themselves to sand-table representation. The fort, surrounding forest, canoes along the waterfront, etc., as described in the story of Daulac, constitute detail for an excellent picture. The tale of the Heroine of Vercheres may also be vividly portrayed.

Probably the most effective method of procedure consists in dividing the group into sections, and assigning to each section the production of certain elements in the total picture. Thus, in the making of maple sugar, one section may be made responsible for procuring twigs to represent trees and planting these in one corner of the sand-table to form a forest. A second may be put to work cutting ice-cream straws into spiles, and fixing these by means of a touch of plasticine to the maple trees of the forest. A third may manufacture sap pails out of white paper, and set these out beneath the spiles. A fourth may construct a team of horses, sled, hogshead, and the sap gatherer. A fifth may make the pot out of black paper, and swing it on a pole between two crotched limbs set upright in the ground.

3. Geographic pictures and historical scenes can be shown by plasticine modellings. Such make excellent projects for application seat-work.

4. Instead of single plasticine pictures, a geographic or historic incident can be represented by a series of illustrations. Each may be termed a movie set. Thus the story of Columbus may be told in three movie sets—"Columbus before the queen," "The voyage," "Planting the Cross"; the story, "How we lit our homes," in five sets—"The torch," "The oil pitcher," "The candle," "The oil lamp," "The electric light."

5. Instead of movie sets, the series of illustrations may take the form of movie films, each film being produced by one pupil with crayons on a sheet of paper.

## GENERAL

1. For junior pupils jig-saw puzzles may be made by pasting a picture at least 12″x 9″ on five-ply wood, and sawing it into sections with a jig-saw or coping-saw.

2. Picture block puzzles may be constructed by grouping 48 inch-and-a-half cubes into an oblong 12″x 9″ within a frame, pasting a picture on the top face of the blocks, and then dividing the paper into squares corresponding with the cubes by means of a sharp knife and ruler. The blocks may then be turned, and the process repeated until six pictures have been thus treated.

## CHAPTER VIII

# METHODS IN HANDWORK

METHODS in teaching hand-work in training classes differ from those in grade classes and manual training centres because of the heterogeneous nature of the class, the limited accommodation and equipment provided, and the greater simplicity and concreteness required in presenting lessons. When a graded class undertakes the construction of a piece of work, the whole class starts at the same time, and moves forward, step by step, together, toward its completion. There is an introduction, a formal presentation, and approximately the same length of work period for all members of the class. When a graded class attends a household science or manual training centre, equipment being provided for all, the class proceeds as a whole. There is no delay while pupils wait their turn to use tools and other equipment.

In a training class the manual work must perforce be undertaken in a room two-thirds of which is occupied by desks. Because of the limited space available and the heterogeneous composition of the class, it is not possible to supply individual sets of equipment for every child. The maximum efficiency is obtained by having the class divided into groups, and providing sufficient equipment for each group.

Even where space and equipment permit a whole class to engage in the same activity at the same time, for psychological reasons it is not always advisable to have them do so. Classes are composed of boys and girls, juniors and adolescents. Adolescent pupils do not like to feel they are doing the same work as little children. It is wise to give them different models, of a larger and heavier type, even though both groups are being taught the same process. Another method of appeasing this growing sense of maturity, and one which helps to develop capacity for responsibility, is to have the older children help the younger. Care must be taken, however, to see that the elder children assist or instruct, and do not merely do the work for the younger pupils.

The following outline lesson in basketry shows the suggested differentiation of models and division of activities relative to the usual accommodation and equipment afforded.

*Models*—Work baskets with wooden bases. The model for juniors, a small open basket with straight sides, suitable for spools; the model for the intermediate group, an open basket with flanging sides; the model for seniors, a basket with straight sides and lid.

*Bases*—The teacher should have the following patterns prepared: For juniors a cardboard circle 6″ in diameter, with openings through which the child can mark the location of holes for spokes; for the intermediate group a paper circle and a cardboard gauge to mark the spoke holes; for seniors a compass, both for marking the outline of the base and indicating the spoke holes.

*Weaving*—The junior group may use one weaver, requiring an odd number of spokes. The spokes can be locked, or dipped in glue and inserted. The sides are to be straight, the height of the weaving two inches. The intermediate group may use two weavers, hence the number of spokes may be either odd or even—the spokes to be locked under the base in front of one, back of one. The sides are to flange outward, the height of the weaving is to be three inches. The senior group, if they have had any previous training in basketry, should start with a coil. They may use three weavers, so the number of spokes should be one over a multiple of three. The spokes are locked beneath base in front of two, back of one. The sides may be either straight or flanged, their height four inches.

*Border*—The junior pupils cut the spokes diagonally across the top, or place them in front of one, and down beside the next, leaving a slight loop. The intermediate group should make a roll border, and the senior group a small roll if a cover is to be made. The seniors' baskets, if well done, may have lids made for them. Do not allow the making of a lid for a poorly constructed basket.

*Finish*—The baskets made by the juniors need no finish other than shellac. The intermediate group should use stain and shellac. The senior group should be able to use either stain and shellac or enamel.

*Division of Activities*—Two of the older children saw and distribute wood for the bases. The pieces should be the approximate size required for the various baskets. One child distributes reed; one at a time cuts reed; three place patterns on wood; six use coping saws; two mark location of holes with gauges; one drills holes with a hand-drill; two can be filing. The activities thus divided among eighteen children can be gotten under way quickly. While waiting for their wood and patterns, two children see that the necessary tools are ready, and two help the little ones to get their work started. The cutting of spokes, soaking of reed, filing, and sand-papering can be adjusted to fit in between such times as saws, vices, and drill are available. The location of holes can be marked before or after the base is cut out.

When teaching becomes individual there is a tendency to omit the formal presentation of a lesson and also a comparison of results. As far as possible, the class should be divided into little groups according to the abilities of the children, and promotion should be made from group to group as processes are learned, just as promotion is earned in academic work. Many lessons can be given to the class as a whole, such as instruction in the use and care of tools, or discussions regarding suitable materials for proposed models. The younger children glean a considerable amount of knowledge from "listening-in," as it is sometimes called.

There are, however, special lessons necessary for senior students which are not of value to younger children. It is suggested that sometimes a simple activity which requires little or no supervision be assigned juniors, in order that the teacher may concentrate on work with the older group. Games which have a definite educational value, such as dominoes, will be more happily received at such a time than formal book work.

At no time should a child stand idly around during the manual training period. Every child should have some simple piece of work at his desk, or conveniently located in the cupboard, which he can pick up and work at any minute he may either have finished his occupation or be waiting for further instruction. The work should be sufficiently simple to be carried on without supervision. Spool knitting is a favourite type of work for this purpose. Whatever it may be, the child should not use this during the formal manual training lesson unless it be to fill in an otherwise idle moment. The formal lesson period should be devoted to more difficult work which may require supervision.

More freedom is necessary during manual training than academic periods, since the children must move around and interchange tools and ideas. This freedom must be "liberty within the law," otherwise little progress can be made. Orderly freedom is only possible with a well-trained class.

Directions for work should be written on the board whenever possible, and the children trained to follow them. The pupils should learn to apply patterns and to make them. They can make original designs for some craft work. With senior groups such methods lead to the reading and making of blueprints in wood and metal work, to the use of commercial patterns in sewing, and to recipes in cooking. Whenever possible, a finished model should be displayed to the class before work is begun.

Types of models to be chosen depend on the composition of the class, the purpose of the teacher, and environmental factors. The fact that a class is composed of all girls, all boys, all juniors, or a mixture of boys, girls, juniors and seniors, bears considerable weight on the choice of models and the development of various subjects. With a class of girls, models of feminine interest will be chosen, and those which lead to eventual specialization in sewing, cooking, and housework will play a large part. In a class of boys, woodwork will assume the most important rôle. The segregation of the sexes allows greater specialization and permits models of more intricate detail to be undertaken than where a teacher has to spend her energies planning and supervising a variety of subjects. Junior children devote a larger portion of their time to academic work than senior pupils do. Hence classes composed entirely of junior children will have simple models and ought not to attempt problems suggested for senior pupils. Classes of senior pupils should develop manual skills to a high degree. Models chosen for these classes should be as practical as possible. All children get a thrill when they make something really usable. The need of articles for school use, such as window boxes or book-shelves, especially in a new class, may cause such work to be undertaken before its ordinary appearance in the curriculum. The joy which its creation brings outweighs other factors.

No model should be given without a purpose. The purpose of the teacher in choosing her models may vary. It may be to arouse interest in the child; it may be to develop a definite stage in a particular craft; it may be to correlate several crafts; it may be to correlate craft with concomitant academic work; it may be to develop muscular control; or it may be because of some seasonal activity. Whatever the purpose, it should be definite, and should fit into the general programme. The various processes required by the model should be carefully studied, and consideration should be given to the number of pieces of material to which they must be applied. In the notes on woodwork a chart is given showing an analysis of the processes and pieces of various models. This same type of analysis should be applied to every craft which the teacher chooses for her class, and models graded according to difficulty.

The environmental factors affecting the choice of models are: (1) accommodation and equipment available, (2) opportunities for the disposal of the work. Where accommodation is limited, the choice of work becomes more difficult. Arrangements must be made to have each group at a stage convenient for the welfare of other groups. It would not be possible to have painting in progress when girls have dainty sewing near by, at least not without detriment to the sewing. If there is no room for a sewing-machine, sewing must be confined to small articles. Garments with long seams, or those which need machine stitching would then be omitted from the curriculum.

The disposal of finished work bears a larger influence on the choice of models than is generally realized. The articles may be: (1) given to the children free of charge, (2) given partly free and partly sold, (3) all sold throughout the year or at the Fall Fair. In regard to giving work to children entirely free of charge, it may be said that few people in this world appreciate that which they obtain free, children not excepted. If there is an unlimited amount of material supplied and given to the children, they are apt to become wasteful and to expect too much from the world in general. On the other hand, if all the work must be purchased, a great deal of its influence may be lost. Some parents are unwilling or unable to pay for the child's work, particularly his first efforts. Lacking encouragement of home praise for his progress, the child loses interest. The most satisfactory method is that followed in many classes. The child takes home his first piece of work, and also a special piece at the end of each term. He may purchase his other work if he wishes, at cost price. This money can then be used to buy more material for the class, and thereby help a little to reduce expenditure.

In some areas where schools hold Fall Fairs, the auxiliary classes are expected, not only to display their work, but to have a considerable number of articles for sale. This arrangement can be carried to such extremes that it is detrimental to the progress of the class. Where emphasis is laid on a special sale of work, the saleability of an article is apt to take precedence over its educational value. It must be remembered that the purpose of the class is educational, not commercial.

Progress is more difficult to record in manual work than in academic work, where it is marked by transition from Book I to Book II, Book II to Book III, and so on through the numerous grades of the school. Each move is heralded by examinations and made conspicuous by change of room. Children have learned that there are many steps to climb along the road to learning. In manual work there have heretofore been no such steps or milestones to mark the distance a child has travelled. As one means of demonstrating progress, report cards for training classes have been prepared, which list various handwork as well as academic subjects. Children are assigned to groups according to achievements, and progress from group to group is recorded.

Sometimes, however, a more frequent reminder of progress is needed as a stimulus to improvement. Progress cards for individual subjects can easily be made out, showing a list of the processes to be learned. An example of one in woodwork is shown. These cards can be marked or punched by the pupil himself to record progress in the same way as he checks off exercises in arithmetic and language. If progress cards were used even for the two major subjects of woodwork and needlework, they would develop the idea that there is a definite path of advancement in every subject. The children would then be more patient in carrying out necessary steps and processes. Discretion must be used in rating a child's attainments. It is not sufficient that he carry through an operation once to be ranked as having learned it; a reasonable quality of expertness should be demanded.

Few children in auxiliary classes care to give much attention to detail. This omission lowers the quality of workmanship. In woodwork this is noticeable in smoothing and sandpapering; in basketry it shows in a careless preparation of bases, and the joining of reeds. In other subjects it shows in similar ways. Care should be given to this phase of training in each subject. It cannot be too strongly emphasized that success in manual work in auxiliary classes depends largely on careful organization of the curriculum and classes.

Some suggestions regarding methods to be adopted are given for woodwork, sewing, and cooking. Similar principles should be followed in regard to other subjects.

## Woodwork

Woodwork is the most important of the manual subjects for boys. It is a popular subject not only with pupils but likewise with teachers and the general public. On account of its extensive use and wide popularity, numerous texts dealing with every phase of the subject have been written. Every teacher of a training or promotion class should have one or more such books for reference, as well as the Department of Education Manual. With a suitable reference library and plenty of initiative, no teacher should find it difficult to arrange a graded series of interesting projects.

A suitable series of models is essential for success in this subject. This can be developed by careful planning, not by a haphazard assignment of work. During her first year of auxiliary teaching, a teacher may be "feeling" her way, but after some experience, she should be able to anticipate the needs of her group and prepare an outline of prospective work. She may have to effect modifications as the term advances, owing to changing personnel in her class, or special events or unexpected abilities or disabilities discovered among her pupils. But the definite objective afforded by such an outline will make for economy of materials, time, and effort.

The curriculum planned should have models which grade in difficulty and furnish variety. For junior children toys and simple objects which do not require complexity of processes are best. For senior children the models should be as far as possible life problems. A rather marked difference should be made in the type of article assigned to children of twelve or thirteen years of age. If a child has reached adolescence before he has learned the elementary stages of the craft, work given him should be heavier or larger than the work given little children; for example, a young child may learn the use of a coping saw by cutting an animal out of thin wood for a toy, a child with greater muscular strength may learn the same process by cutting an animal out of thick wood for use as a bread-board.

Success in choosing a series of models depends largely on the teacher's ability to analyse the processes and difficulties of each particular piece of work. The following chart gives a table showing how the work of a model can be analysed. (This chart deals with thick wood only, similar studies should be made for thin wood and strip wood.) A bread-board, for instance, can vary from a model requiring five processes to one requiring eleven.

## CHART—SHOWING ANALYSIS OF PROJECTS

| | **Exercises in Shaping** | | | | | | | | | | | | | | | **Joining** | | | | | | **Assembling** | | | | | | | **Finishing** | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PROCESSES | Whittling | Sawing to length | Coping saw work | Drilling holes | Planing to width | Planing surfaces | Planing ends | Chamfering | Chiselling | Boring holes | Spokeshaving | Planing at angle | Bow sawing | Working in duplicate | Chamfering on angle | Butt joint | Half-lap joint | Mitre joint | Housing joint | Mortise and tenon | Dowel | Fastening nails | Fastening screws | Glueing | Glueing for width | Glueing for thickness | Glue and Clamps | Hinges | Filing | Sanding | Painting | Staining | Waxing | Shellacing | Rubbed finish | Filled and varnished | Design work | No. separate pieces | No. of processes |
| MODELS (Wood, ⅞" or over) / TOOLS, MATERIALS, ETC. | Knife | Back saw, square | Coping saw | Drill and bits | Jack plane | Jack plane | Jack plane | Jack plane | 1" Chisel | Auger, bit, brace | Spokeshave | Smooth plane | Bow saw | | | Hammer, screwdriver | Mitre-box or saw | Paring chisel | | Mortise chisel | Dowel rod ¼" or ⅝" | Nails ½"-1½" | Screws ¾"-1½" | LePage's Glue | Bar Clamps | Hand Screws | | Screw driver | Files | Sandpaper 0-½-1 | | | | Shellac Alcohol | Varnish-Pumice | Filler, etc. | Veiner, punch | | |
| Key Board (rectangular)........... | | x | | | x | x | x | | | | | | | | | | | | | | | | | | | | | | | x | | | | | | | | 1 | 5 |
| Key Board (shaped outline)...... | | x | x | | x | x | x | | x | | | x | | | | | | | | | | | | | | | | | x | x | | | | | | | | 1 | 9 |
| Watch Stand (with finish) ........ | | x | x | x | x | x | x | | x | | | | | | | x | | | | | | | x | | | | | | x | x | | x | x | | | | x | 2 | 14 |
| Bread Board (animal).. ............ | | | | | | x | | | | x | | | x | | | | | | | | | | | | | | | | x | x | | | | | | | | 1 | 5 |
| " (rectangular) ............... | | x | | | x | x | x | | | x | | | | | | | | | | | | | | | | | | | | x | | | | | | | | 1 | 6 |
| " (chamfered)................. | | x | | | x | x | x | x | | x | | | | | | | | | | | | | | | | | | | | x | | | | | | | | 1 | 7 |
| " (rounded corners)........ | | x | | | x | x | x | | x | x | x | | | | | | | | | | | | | | | | | | x | x | | | | | | | | 1 | 9 |
| " (rounded corners and chamfered)............... | | x | | | x | x | x | x | x | x | x | | | | x | | | | | | | | | | | | | | x | x | | | | | | | | 1 | 11 |
| Hat Stand (hexagonal base)...... | | | x | x | | x | x | | | x | | x | | | | | | | | | x | | | x | | | | | x | x | x | | | | | | | 2 | 11 |
| " (oct. base, chamfered) | | x | x | x | x | x | x | x | • | x | | x | | | x | | | | | | x | | | x | | | | | x | x | x | | | | | | | | 15 |
| Book Ends (pr.) with finish...... | | x | | x | x | x | x | x | x | x | x | x | | x | x | x | | | | | | x | x | x | | x | x | | x | x | | x | | x | x | | x | 6 | 24 |
| *Book Ends (pr.) with finish.... | | 12 | | 4 | 6 | 6 | 12 | 4 | 2 | 4 | 2 | 2 | | 3 | 2 | 2 | | | | | | 2 | 2 | 2 | | 2 | 2 | | 2 | 6 | | 1 | | 2 | 2 | | 2 | 6 | 24 |

*By using figures instead of x the number of times a process must be repeated can be indicated.

Models vary, not only in the number of processes required, but in the number of times they are repeated, for instance, a pair of book-ends requires each step to be duplicated. A pair of book-ends made in the form of tiers may require the operation of sawing to length to be repeated twelve times. This can be indicated on the table by substituting 12 for "x" under "sawing to length." Similarly, numbers can replace "x" throughout when definite patterns have been chosen.

Having arranged her curriculum, the teacher should systematize her daily lesson. Materials should be prepared before the lesson is begun. If necessary monitors may help in the preparation and distribution. Constant watch must be kept over the progress of each child, in order that he may receive definite training, not haphazard contact with the subject. To facilitate this supervision, progress cards are helpful. These can be checked by the teacher, a monitor, or by the child himself, and are useful in demonstrating to the pupil his progress from group to group.

PROGRESS CHART

Name.................................... Woodwork

| Groups 1 and 2 | | Groups 3 and 4 | | Groups 5 and 6 | |
|---|---|---|---|---|---|
| Use of coping saw | x | Coping-saw profic'ncy | | Bow sawing | |
| Filing | x | Spokeshaving | | Coping-saw on thick wood | |
| Sand-papering | x | Planing surfaces | | Planing ends | |
| Measuring 1″-½″ | x | Measuring ¼″ | | Measuring ⅛″ | |
| Squaring lines | | Squaring ends | | Laying out stock | |
| Drilling holes | | Boring holes | | Chiselling out joints | |
| Nailing | | Fastening with screws | | Glueing wide boards. | |
| Back sawing | | Rip and cross cutting | | Sawing to depth | |
| Planing edges | | Planing a chamfer | | Planing similar pieces | |
| Drawing patterns | | Using design punch | | Half-lap joint | |
| Sawing similar pieces | | Chiselling to a line | | End half-lap joint | |
| Recognition of grain | | Nailing thicker wood. | | Recognition of woods | |
| Painting | x | Staining—shellac | | Rubbed finish | |

Better results are secured from the organization of a class into instruction groups than from individual teaching. A division of the woodworking lesson into periods for group instruction and periods for group practice may be accomplished in much the same fashion as an arithmetic period is divided into recitation and seat-work allotments. Confusion is avoided, economy of time is effected, and more definite steps of advancement are made possible. Promotions made from group to group afford strong incentives for the development of skills and habits of careful workmanship. They likewise assure parents that the child is pursuing a carefully-planned educational programme. If, while the teacher is engaged with an instruction group, a pupil in a practice group meets with a difficulty which he is unable to surmount, he should have a piece of "pick-up" work to occupy his time until the teacher is able to render assistance.

## Care of Tools

The care of tools is an important phase of this subject. One section of a cupboard should be arranged for their proper storage. Racks and holders should be made for each particular variety of saw, hammer, drill, etc. If a place is provided for each tool, it is an easy matter for a monitor to keep check. The name of each type of article should be legibly printed and pasted close to the holders, so the boys will become familiar with the printed names. For names and description of tools refer to the *Manual on Manual Training*, pages 171 to 181, or *Hand Woodworking* by Evans, Parks, and Slatterie.

Tools should be kept clean. Should they become discoloured or rusty they may be polished with fine emery cloth soaked in machine oil, or with fine emery powder, oil, and a cloth. Steel rulers ought to be polished often, as they become dark and difficult to read. Before storing tools at vacation time, they ought to be rubbed with an oily rag or vaseline. The vaseline must, of course, be wiped off before the tools are used again. Arrangements should be made to have the tools sharpened by an expert periodically.

Brushes should be cleaned each time they are used. Turpentine removes paint and alcohol shellac.

## Material

Care should be exercised in the use of material. Children should not be allowed to cut up lumber without supervision. Either teacher or monitors should prepare wood the size required. Instruction in the application of patterns to wood should form part of the course, as well as information regarding types of wood suitable for various purposes. In this connection the making of collections of wood is interesting and correlates the subject with geography and nature study.

New material is preferable to old because it results in a better product and saves time. On the other hand, some training must be given in the adaptation of old material. A large proportion of training and promotion class pupils come from poor homes, and if not encouraged and trained in the making over of old boxes and used lumber, will not develop sufficient ingenuity to effect reconstruction work around their homes.

The most suitable wood for general use is basswood. It is soft, straight-grained, and nails without splitting. Pine is preferred by some teachers, but it is difficult to obtain free from knots, and does not readily take a dark stain. It is, however, preferable for outside work, such as window-boxes and bird-houses. Three-ply cottonwood is suitable for toys which have small fine parts. It can be obtained $\frac{3}{16}''$, $\frac{1}{4}''$, or $\frac{3}{8}''$ thick. Red gumwood is suitable for finer work, provided care is taken to secure straight-grained lumber that is well seasoned. It warps badly if not thoroughly dried. While not hard, it is compact, and may be readily cut or carved. It takes a beautiful finish either natural (oiled) or stained. Whitewood is good, but harder and more expensive. Chestnut possesses a beautiful grain, but requires a coloured filler.

## Planing

Squaring up stock is a basic wood-working operation. The term means planing a piece of wood to specific dimensions, with all faces and edges smooth and at right angles to each other. Directions for this operation are given in the *Manual Training Manual*, Page 182.

The following points, however, should also be noted. Planing across the grain is more difficult than planing with the grain. To avoid splintering the edges, plane from each edge towards the centre. A smooth edge can be obtained by setting the plane quite fine and using an oblique cut. When planing diagonally with the grain, work from edge to end to avoid splitting. When planing a chamfer or rounding an edge, the wood should be tilted at the left-hand side and the plane kept horizontal. See *Hand Woodworking*, page 21.

### FINISHING

*Smoothing and Sand-papering*—Children are eager to construct an object and enthusiastic to paint it. There is, however, a step between these two which is not so popular, the smoothing and sand-papering of the wood ready for finishing. This process does not show the same quick, attractive results as the other two, and so does not make as strong an appeal. Children, particularly retarded children, are prone to skip lightly through this stage of work, and are apt also to omit sand-papering the first coats of paint. Teachers are well advised to insist on a proper performance of this activity.

*Crayons and Shellac*—Crayons may be used to apply colour to toys followed by a coating of shellac. This finish is suitable for use with junior pupils, but is not as attractive as paint.

*Paint*—When paint is used as a finish, at least two coats are required. The first should be a priming coat of flat white. This should be applied thinly and allowed to dry for twelve hours. The first coat should be lightly sand-papered before the second coat is applied. The second coating may be gloss paint or enamel in colours and should be thoroughly dry before adding details of patterns or faces.

*Staining*—Before staining, glue, scratches, and bruises should be removed by scraping and sanding. Apply stain evenly with a brush. When thoroughly soaked in, wipe clean and allow twelve hours to dry.

Brown stain may be made by mixing linseed-oil and turpentine with one of (1) black asphaltum, (2) burnt umber ground in oil (this makes a light brown), (3) burnt sienna (reddish brown).

Commercial colours prepared by reliable firms are satisfactory, but varnish stains and stains with spirit as a solvent should be avoided. Stains which may be thinned with turpentine are best.

### WAX, SHELLAC AND VARNISH

*Wax* gives a glossy, dust-proof finish, but it is not durable. Any good floor wax may be used. The surface may be cleaned with turpentine, and the polish renewed. To get the best results with this finish, the wax should be applied and polished several times.

Do not apply any other finish to a waxed surface.

*Shellac* is a solution of lac gum in wood alcohol. It sets quickly and forms a hard surface when dry. The liquid should be kept thin by the addition of alcohol. To apply shellac use a fine varnish brush and take quick, even strokes. If two coats are needed, rub the first smooth with No. 00 sandpaper before applying the second.

*Varnish* is kauri gum dissolved in hot linseed-oil and thinned with turpentine. Teachers, however, are advised to buy prepared varnish. "Four-hour varnish" is excellent for their purpose. Several coats should be applied, each thoroughly dried and smoothed with fine sand-paper (No. 00 or finer) before the next is applied. Varnish may be applied after the first coat of shellac if a more durable finish is desired. To obtain a dull or rubbed finish, polish the last coat with powdered pumice stone and water, using a felt pad.

### *Suggested Models*

In all manual training subjects, pupils should be encouraged to make articles for use in their own classroom or other rooms of the school. Children take great pride in seeing something they have constructed put to use in real life. Window-boxes, book-ends, book-shelves, blackboard benches, ink-well stands, racks for pencils and other articles may be constructed. Games which can be used in class work or as recreation may be made, such as, blocks, dominoes, bean-bag board, checkers (cut from a broom handle, the board made from the end of an orange crate). Directions for several practical models of use in a training class are given in the *Manual Training Manual;* namely, a hectograph, page 21, table loom, page 61, bench hook, page 192, cutting board, page 17.

By using cutting boards and V-shaped sawing boards, with clamps, much of the coping-saw work can be done at individual tables or work tables, thus leaving the work benches free for more difficult operations.

*Rake Knitters* should be made in every class. These are made by cutting a hollow circle of ¾″ or 3-ply wood, the inside circle 10″ and the outside 16″ in diameter. This gives a 3″ circular band. Mark holes around this band 1″ from the inside edge. Place holes 1″ apart. Drill for ¼″ dowel. Cut pegs of ¼″ dowel 1½″ long. Smooth one end with sand-paper. Glue other end in hole.

To use a rake knitter proceed as with spool knitting (see directions given under sewing), but using heavy wool. When the tube of knitting is long enough to fold double and use as a toque, remove from frame by passing the end of wool through the last row of stitches and drawing tight. Gather the other end and place a tassel on it. Fold the first end of knitting inside to form a toque.

Scarves may be made by turning back instead of completing the circle. The work proceeds back and forth instead of round and round.

Oblong knitters may be made by fastening together two long and two short blocks. Brads or pegs are placed along these. The work can be carried across from side to side, or worked around as in the circular knitter. Oblong knitters are excellent for scarves, but when used for making toques irregular stitches are apt to appear at the corners.

## NEEDLEWORK

The importance of needlework in a woman's life is so great that the teaching of sewing is frequently left out of her education on the assumption that she will learn to sew in the natural course of events just as she learns to walk. From an economic, practical, and aesthetic viewpoint it is highly important that every woman have some knowledge of the craft.

Design in sewing requires mental brilliancy, planning calls for ingenuity, yet there is so much in sewing which is the product of direct training and manual skill that many children, dullards in abstract learning, can become quite proficient in its practice. Unless hampered by poor muscular control, there is no reason why girls in training and promotion classes should lag behind grade children in this subject.

In teaching sewing possibly the most valuable contribution which can be made towards a child's education is the development of (1) pleasurable and efficient habits of work, and (2) skill in the application of knowledge to the practical problems of life.

One of the most important habits to be formed is the acquisition of a comfortable and suitable posture. A strained position creates fatigue; fatigue results in poor work and a loss of interest frequently blamed on the nature of the task rather than on the position of the worker. A mere expounding of correct posture is not sufficient. Constant daily supervision and gentle reminders are required, until a suitable position becomes habitual. This training is particularly desirable with children who are inclined to be somewhat slovenly in posture.

The following general rules are suggested for development of desirable habits and for general guidance.

1. *Position of worker*—A comfortable erect position is best, with the worker well back in the chair, feet resting on the floor. Position of the sewing in the hands varies with different stitches and articles.

3. *Light*—If the light is concentrated, it should fall over the left shoulder. It must be good, to avoid eye-strain, particularly when black material is being used.

4. *Care of work*—Cleanliness is essential. Hands ought to be clean. The use of an apron or protection cloth is advisable. The less work is handled, the longer it remains clean. At the close of a lesson the children should put scissors and thimbles

carefully away, fold their work, and place it either in a cloth or in a box plainly marked with the owner's name. Tables and floor should be left neat and clean.

5. *Use of tools*—

(1) *The Thimble* fits the middle finger of the right hand.

(2) *Needles.* The needle should be as fine as the thread will permit—No. 7 with No. 50 thread; No. 8 with No. 60, 70, or 80 thread; No. 9 needle with No. 90, or 100 thread; No. 10 needle with No. 120 thread.

(3) *Thread.* The gauge should correspond to the threads of the cloth. Length for basting 1 yard, for sewing ½ yard. Thread is cut from work. Practise threading needles with cotton, silk and wool thread. With cotton use the end hanging from the spool, the newly cut end with silk and loop with wool. A knot is only used in basting or where it may be concealed. It should be small and at the end of the thread.

(4) *Scissors.* Practise cutting with paper. The full length of scissors is used in cutting. Methods of cutting on thread, drawing thread, and tearing, are developed in dealing with different materials.

6. *The use of stitches*—

(1) Basting is a guide for sewing.

(2) Hemming is used to catch a folded edge. With very little children a running stitch is better for this purpose.

(3) A running stitch is used for gathering.

(4) Backstitch takes the place of machine stitch.

(5) Overcasting or blanket stitches prevent ravelling on raw edges.

(6) Overhanding is used to join two finished edges.

(7) Darning is for mending.

(8) Blanket, outline, cross, chain, hem, and feather stitches are used for decoration.

### *Groups I and II*

1. Children start sewing on cards using bright wool. The picture on the card may be a number fact or word which has just been taught, or it may be a picture to teach form and colour for an art lesson.

The next step is sewing with wool on canvas. Running stitch and blanket stitch can be used. The canvas should be stretched over cardboard or wood to hold it firm. The model may be a wall-ticket case, a mat, a needle-book, a napkin ring, book mark, or other simple article. Penelope canvas is sold in different meshes. It is an open mesh canvas 27″ wide at 35 cents a yard. A coarse mesh is best. Java canvas is a closer weave material ranging from cream to sand shade, 66″ wide at $1.80.

The same stitches can be applied in bright embroidery cottons or silkene to felt or oilcloth to make pencil cases, ticket holders, etc.

The stitches should be large, just as the writing of a primary child is large. As motor control develops, finer work can be expected.

Spool knitting may be given. Four or five brads are nailed in the top of an empty spool. Wool is knotted and the loop placed over one brad to hold it in place. The wool is then carried around the circle of brads looping each in turn. As the wool is brought around a second time, instead of looping it, the first row of wool on each nail is lifted over the second row, and over the top of the nail towards the inside of the spool. A crochet hook or strong pin can be used to lift the wool. This process is repeated time after time. Each row of wool holds the preceding, as stitches in knitting. Gradually the work emerges at the bottom of the spool like a tube of knitting. This can be sewn in rows to make covers for chair seats, cushion tops, tea-pot covers, rugs, etc.

Card weaving of wool or raffia on cotton warp is excellent for this group. It serves as an introduction to darning and weaving. A hole is punched in the centre of a card. A circle is drawn with a radius of 3″ or more. Small holes are punched, at half-inch intervals, around this circle. The number of holes must be odd. Cotton warp is then wound from centre to circumference and back till every hole on the circle is threaded with warp like the rays of the sun. Bright raffia can be sewn in and out of the rays, starting from the centre and working towards the outside edge. When both sides have been filled in and the projecting cardboard edge covered, the result is an attractive teapot stand. If wool is used and the weaving continued half-way towards the centre on the lower side, the cardboard can be entirely removed, leaving a doll's tam. Many other articles can be made in the same way.

2. In Group II the children apply the stitches they have learned to cotton fabrics. Gingham or chambray are particularly good for this step, as they are fine enough to permit easy sewing yet firm enough to handle. Unbleached (factory) cotton can be used. It is a little more difficult to fold into a hem.

Stitching at first should be in coloured thread, which makes a trimming and shows the stitches clearly. The child can readily see if they are uneven. Running stitch should be used rather than hemming.

Straight edges for hems are preferable in this group, in order that the child may learn to fold the hem herself. The stripes on gingham form a gauge for folding. If plain material is used, have the pupil draw a line to mark where the edge of the fold is to lie.

If inside seams need finishing, use a blanket stitch or overcasting rather than a French seam.

Knitting can be started in this group. Short bone needles are advisable. These can be made by cutting a long needle in half and sharpening the knobbed half at the break. To make a knob for the other piece glue a cork on the blunt end. Broken needles can be utilized. Needles of this size are easier for a beginner to handle, and are quite large enough to hold ten stitches of wool. Ten stitches make a strip the right size to cover coat hangers. Small squares can be sewn together to make a doll's afghan.

Wool is a better medium than cotton for beginners to use in knitting, as it has more "give" to it. It should be used in bright colours which do not soil readily. Until children have been trained to keep their hands and work clean, it is folly to give them pastel tints or white.

With older children whose motor co-ordination is poor, rake knitting can be used. This is similar to spool knitting, only on a larger scale. The tube of knitting is of a size suitable for toques, scarves, etc. Directions for constructing a rake knitter are given in the section dealing with woodwork.

### *Groups III and IV*

3. In Group III a child learns to fold curved hems. A small cardboard gauge can be used to measure the hem as it is turned. Bias bindings are introduced. Prepared binding is used at first.

Hemming is used, overhanding, and other stitches developed.

Knitting in this group is given with larger models; squares make bed socks or baby booties. Scarves can be given to a girl who knits rapidly enough to finish her problem without losing interest.

Stocking darns are the natural outcome of card weaving. For the first darn, a piece of stocking or woollen cloth is fastened over cardboard.

Measuring and cutting a small article should be started.

4. More complicated stitches are developed. Hemstitching is taught as another means of finishing a hem. If cooking is taken with the class, caps and simple aprons should be made by this group.

If the teacher feels that her pupils have mastered hand sewing with skill, she could give the introductory steps to machine sewing in this group. The first step is treadling. Practice should be given in stitching before the machine is threaded. Practice sheets can be made on paper. First straight lines are ruled, then diagonals, spirals, and "spiral" squares. Start with coarse stitches.

### *Groups V and VI*

5. In this division machine stitching is developed. This allows the making of larger garments. They should be of simple construction.

Crochet or felt berets, with a felt purse to match, are excellent problems for this group.

In knitting, models such as baby's sweater or suit, tea-cosy, etc., should be used.

Training should be given in following written directions and in calculating cost and quantities of material. This can be correlated with arithmetic.

6. More complicated dresses are attempted. The use of commercial patterns is developed. Repairing of garments is taught. The choice of suitable clothing for seasons and occasions should receive attention.

## COOKING

Cooking in training and promotion classes should be taught as group work. This gives experience in handling family amounts and is more economical in regard to supplies and oven space. Home conditions are further approximated by a combination of senior and junior children working together like a family group, and by use of utensils with which the children are familiar. Occcasional lessons in cooking individual amounts should be given, so that every child may have the experience and joy of being wholly responsible for the success of her recipe.

Cooking can be made a seasonal activity. During the winter months, when hot lunches are most important, this subject is an interesting and valuable addition to the curriculum. If there is no necessity for a noon lunch, it can be taught intensively for the first or last five months of the school year, alternating with some other activity. The time devoted to cooking varies considerably. In some classes where a luncheon is prepared every day the time devoted to this is sufficient for training purposes. Other classes take an additional special lesson one day a week, usually from afternoon recess till dismissal. Where no special time is devoted to the luncheon hour, two lessons a week may be given. The amount of time given the subject and the period of day to which it is assigned must vary according to local circumstances.

A cleanliness inspection should precede each lesson. Meticulous care should be given to the hands. Dresses should be brushed before uniforms are donned. Uniforms usually consist of an apron and cap, with a pot holder and personal towel fastened at the right side. Several dark aprons of durable material, or rubber aprons, should be available for children who have cleaning or washing to do. These can be worn over the lighter apron.

Uniforms can be made during the sewing lessons. An extra outfit kept on hand is very convenient in case of new arrivals. Dish-towels, dish-cloths, and wash-cloths should also be prepared.

Scientific terminology should be avoided. Only the simplest of general principles should be taught. In a training class the following recipe would have but little meaning—

### COOKING CEREALS FOR BREAKFAST

For 1 cup of water use ¼ tsp. of salt.
and the following cereal,—
Whole or cracked—¼ cup of cereal.
Granular—3 tbsp. of cereal.
Rolled or flaked—½ cup of cereal.

This recipe should be given as follows—

### OATMEAL PORRIDGE

4 cups of water.
1 tsp. of salt.
1 cup of oatmeal.

This should be followed by explicit directions as to making. Similar directions should be given for several other of the most commonly used cereals.

## RECIPE BOOKS

The making of recipe books is an important phase of the subject. Children should not be expected to memorize recipes for class use, nor to practise them from memory at home. Every girl should have a special recipe book. These can be made by the children writing or pasting recipes in a special book rendered attractive by an occasional picture. Books are more permanent than cards. In some cities small printed books are supplied each pupil. Whatever the form, the teacher should check the accuracy of the recipes, as many children are careless in transcription. For this reason some teachers have recipes typewritten and duplicated, which the children paste in their books.

Teachers who wish a recipe book for their own reference will find *The Canadian Cook Book*, prepared by the Toronto Technical Schools, an excellent volume. For general directions and suggestions they should refer to the *Ontario Teachers' Manual on Household Management.*

Considerable repetition is necessary in every subject, particularly with children of low I.Q. To teach a cream sauce, for instance, it may be necessary to repeat the operation with every possible variation, before the children can be depended on to prepare one measuring up to a desirable criterion.

Rewards are just as necessary in cooking as in other subjects. Many teachers feel that the pleasure of eating the food which has been prepared is sufficient incentive. This pleasure is fleeting. Its memory is soon gone. Little paper stars awarded a well-done task remain, and are constant reminders that efforts have been worth while.

Division of activities among the children varies from class to class, depending on the particular type of girl in the room and on the accommodation and equipment provided. In one class the work may be divided among seniors, intermediates, and juniors. The juniors do table setting, the intermediate children collect equipment and help the seniors. The seniors are responsible for the cooking. In another class a senior, an intermediate, and a junior child may be grouped together. Each child is assigned an activity, but the senior pupil is responsible for the group.

### *Groups I and II*

Children in this group do little actual cooking. They learn simple but essential activities, such as making cocoa and toast, cooking an egg, cooking cereal, serving milk and caring for it, washing lettuce and celery. They devote most of their energies to table setting, preparing vegetables, and washing up. They love polishing silver and other metals, and will polish spoons by the hour if permitted to do so.

### *Groups III and IV*

This intermediate group do more cooking but are kept under close supervision. They can prepare simple dishes and take their turn at the preparation of the noon lunch. They should practise following written directions.

### *Groups V and VI*

The senior group should be able to follow written directions and compile a book of recipes worth keeping. They should be able to prepare a simple luncheon or afternoon tea without help from the teacher. It is a good plan to make them responsible for lifting pans or kettles of boiling water, and to prohibit little children from attempting to do so.

# BOOK THREE

## *PHYSICAL AND SOCIAL VARIANTS*

### Chapter I

### DEPARTMENTAL CO-OPERATION

PHYSICAL variants range from sick children under continuous medical treatment, through convalescents and suspects requiring medical supervision, to fixed cases and arrests whose physical condition merits special educational consideration rather than special medical attention.

A gradient so established serves to determine and define those co-operative relations which must necessarily exist between medical and educational organizations concerned with the welfare of these children. Where the dominant coefficient in a situation is restoration to health, major responsibility is assumable by the Department of Public Health, the Department of Education extending its services incidentally and under advisement. Where the chief factor is adjustment or readjustment to the duties of citizenship, the chief responsibility falls within the province of education.

Social variants may be described as children who are mentally sick or mentally crippled to such a degree that, for the time-being, their presence at large constitutes a danger to themselves and to society. Children who have been committed to institutions for various juvenile offences may be in reality suffering from mental sickness. Continued wrong response or continued non-response to situations having fundamental social import, such as rights of person, rights of property, etc., have resulted in mental maladjustment which may or may not be curable, but which for the time-being renders impossible the child's further continuance in a law-abiding society. Both for his own safety and the safety of others, he is confined to an institution, much as a diphtheria patient is confined to an isolation hospital.

Again there are children so badly crippled mentally as to be non-adjustable for the time-being to the requirements of social living. Such children also, for their own good and for the good of others, are placed in institutions. Orphans and other children lacking natural parental care and protection and who are too young to fend for themselves may likewise be placed in homes, orphanages, shelters, etc.

In such cases of institutionalization it is evident that the problem of immediate concern is the elimination of danger, both to the individual and to society. Hence major responsibility is assumable by the Department of Public Health or the Department of Public Welfare controlling the institution in question.

Financial obligation would appear to be the concomitant of administrative responsibility. A school board should not be called upon to construct hospitals for tubercular children, bear the entire cost of buildings for tubercular suspects, nor maintain institutions for the socially non-adjustable feeble-minded. A medical board should not be expected to provide schoolroom accommodation for hard-of-hearing classes nor texts for forest schools.

It may likewise be noted that these situations call for adjustment and articulation of departments as wholes and not for overlapping and infiltration. It is as absurd for school boards to discuss forms of treatment for tubercular and mongoloid children as for medical boards to grade pupils, outline history courses or correct speech habits.

The gradient of administrative responsibility as existing between the Department of Education and the Departments of Public Health and of Public Welfare may be specifically represented by the following series of typical classes:

1. Classes of minor educational responsibility.
    - Hospital Classes.
    - Sanatorium Classes
    - Preventorium Classes.
    - Institutional Classes (for mentally defective, delinquent, and unprotected children).

2. Classes of dual adjustable responsibility.
    - Forest School Classes.
    - Open Air Classes.
    - Visiting Teacher Classes.
    - Orthopedic Classes.
3. Classes of major educational responsibility.
    - Sight-saving Classes.
    - Oral Classes.
    - Hard-of-hearing Classes.
    - Speech-Correction Classes.
    - Institutional Classes (for blind and deaf children).

## Chapter II

# CLASSES OF MINOR EDUCATIONAL RESPONSIBILITY

### A. Hospital, Sanatorium, and Preventorium Classes

DISEASES of the bones and joints, infantile and other forms of paralysis, congenital defects, rickets, and accidents are chiefly responsible for crippling defects in school children. Tuberculosis (in order of frequency, spine, hip, knee, and ankle) heads the list as an individual cause. Poliomyelitis follows closely. The age of onset for all types of crippling falls predominantly in the years preceding school life. Children in hospitals are for the most part suffering from one or other of the above defects—the majority, orthopedic cases, remaining for lengthy periods, frequently with plaster casts applied to diseased parts. In a sick children's hospital are also to be found those who, after acute rheumatism, diphtheria, or other illness, have serious heart conditions, patients who are suffering from some form of nervous disease, such as chorea, and others with sight impairments from various causes.

Preventoriums are primarily designed for children who have suffered exposure to tuberculosis. Such children usually present problems of malnutrition, being underweight and deficient in resistance. Home conditions may not allow the child to obtain food and sufficient rest, so he is placed in a preventorium until sufficient improvement has been made in his physical well-being to insure safety. Treatment is much the same in all preventoriums—fresh air, rest, proper food and cleanliness. In sanatoriums are children who suffer from tuberculosis of throat, lungs, bones, joints, etc. In both types of institution the time of cure is usually very protracted.

For educational purposes the children in these institutions may be divided into two classes. Those who, owing to the nature of their disability, are confined to bed, are known as bed-patients. Those who can with safety move about, though it may be with the aid of a wheel chair, are called up-patients.

Auxiliary education aims to give the physically disabled child as many of the amenities and advantages of normal school life as possible, to encourage corporate well-being amid an atmosphere of happiness, and by specially adapted methods of instruction to maintain grade proficiency and progress.

Following a request from the directors and governors of a hospital, sanatorium, or preventorium, a local school board may establish a class which, with the approval of the inspector of auxiliary classes, may be organized as an auxiliary class. The requirements for approval are adequate accommodation, proper equipment, and the engagement of a fully qualified teacher.

Children between the ages of five and twenty-one who, in the opinion of the superintendent of the hospital and the doctor in charge, are likely to receive benefit by instruction, are selected to make up the class complement. The maximum number of pupils per class is thirty up-patients or twenty bed-patients. The number of pupils in mixed classes consisting of up- and bed-patients is adjusted proportionately.

The teacher organizes her class in respect to hours of instruction and duration of periods upon the advice of the physician in charge, subject to the approval of the Inspector of Auxiliary Classes.

Up-patients are able to receive instruction in a schoolroom where a time-table for ungraded classes is followed. Bed-patients must be visited by the teacher and lesson assignments given. In some institutions where both up-patients and those confined to bed are under tutelage of one teacher, the up-patients have a regular period of school work in the morning, and during the specified rest time for these pupils, the bed-patients are visited. In other institutions under similar conditions both types of patients receive morning and afternoon instruction. Organization may be rendered difficult, owing to the fact that the personnel of a hospital and the status of up- and bed-patients is continually changing.

A schoolroom, or at least a room set apart for school work, is most desirable. To be transferred from a ward where one has been confined for some time is a beneficial change for the pupil. The room may be lacking in many school trappings, but plenty of fresh air and sunshine from as many windows as possible is essential. In some institutions during clement weather, lessons may be taken in open-air accommodations fitted up on the roof or on hospital grounds. If a schoolroom is provided for up-patients according to regulation requirements by the Board of Education, it is subject to grants for accommodation; if provided by the hospital, it must meet with the approval of the Inspector of Auxiliary Classes, but is eligible for no grant for accommodation.

Special equipment provided by the school-board and approved by the Inspector of Auxiliary Classes is eligible for reimbursement grants. The following items are suggested:

1. For up-patients accommodated in schoolrooms:

(1) Two cupboards 7′x4′x20″ with shelving as required.

(2) Movable and adjustable desks. Many children are able to come into the schoolroom in wheel-chairs which may easily be converted into very good school desks by placing a regulation hospital tray across the arms. The child is made comfortable and unnecessary movement is avoided. Children in almost complete casts may be lifted from their beds and accommodated on stretchers. Sometimes it is convenient to wheel the bed into the schoolroom. In the two latter cases instruction will be carried on largely by oral methods, the main end in view being the association of the patients in question with the schoolroom group.

(3) A hospital schoolroom should have two tables, a large one 30″ high for senior children whose casts may be so constructed as to render sitting at a desk impossible and a stoutly constructed table of kindergarten type for smaller children. Ordinary chairs are furnished for higher tables, while kindergarten chairs with arms are suitable for juniors. Chairs should be equipped with rubber tips to eliminate noise, and to give a greater feeling of steadiness to the child who is sometimes timid about sitting in a chair after long periods in bed. Sometimes a small wheel-chair is made by attaching wheel casters with

rubber tires to a kindergarten chair. A child who is unable to walk or stand has a great deal of pleasure moving about in this way. The main thing is to have the chair fit the pupil, and the hospital teacher should know something about casts—why they are put on and what movement the child is allowed without injury to affected parts.

(4) A gramophone is an asset in the study of music appreciation, in the conduct of rest periods, and in the organization of games and such physical exercises as are permissible.

(5) A sand-tray 40″x 36″ may be constructed of five-ply wood and edged with inch stuff to which the bottom is screwed. The bottom is painted blue inside to represent water, and the whole is coated with spar varnish. Such a sand-table occupies but little space, requires but little sand, can be used to represent pictures in perspective, and may be conveniently stored when not in use.

(6) A typewriter can be used by senior pupils taking commercial courses, and is of great assistance to the teacher in preparing exercises and seat-work for bedside work assignments.

2. For bed-patients:

(1) A portable blackboard for the teacher to use in the ward.

(2) A cart, built for carrying school supplies and books about the ward, and to serve as a teacher's desk by the bedside.

3. For both up- and bed-patients:

(1) Manual training equipment in:
  (*a*) Paper and cardboard construction
  (*b*) Sewing
  (*c*) Knitting
  (*d*) Weaving
  (*e*) Raffia work
  (*f*) Reedwork
  (*g*) Leatherwork
  (*h*) Woodwork

For details, see equipment for mixed auxiliary training classes, Chapter II, Book II. One work bench is ample should woodworking be included in the programme.

(2) Academic equipment—
  (*a*) Plasticine; letter, phonic, sentence, and number builders; peg board, toy money, etc.
  (*b*) Sets of supplementary readers in history and geography as specified in Circulars 14 and 58.
  (*c*) Seat-work and assignment aids as suggested on pages 195, 196.

The regular Public and Separate School Courses of study with such modifications as may be deemed advisable by the auxiliary teacher, the physician in charge, and approved by the Inspector of Auxiliary Classes, are followed in the case of static and curable cases. One of the main purposes of the class is to bridge the gap caused by the child's absence from school, and thus enable him on restoration to health to return to the regular grades with the minimum degree of retardation. Each institution presents its own particular needs and problems. Methods of procedure must be adapted to meet various requirements. But one situation is common to all—the desire of the occupant of each hospital bed to be doing what other boys and girls are doing in the regular school grades.

Many of the children have never attended school of any kind, while others have been keeping up with the regular grades. The new pupil is ever anxious to tell "the place" in various text-books and the hospital teacher is able to proceed from there, easing the mind of the sick child by the knowledge that he is able to do the same lessons as his classmates. In many cases the grade teacher is anxious that the child should keep up with the assignments of his class, and is more than willing to co-operate with the auxiliary teacher in keeping the patient in touch with the school programme.

In cases of mental retardation due to the effect of disease or otherwise, the Course outlined for auxiliary training classes, Chapter IV, Book II, may be followed with advantage. Adolescents and post adolescents may find that their disease, though arrested, or their operation, though successful, has left them in such a physical condition that educational rehabilitation becomes necessary. A permanently crippled right arm may require the patient to be taught to write with his left. A collapsed lung may necessitate a young farmer fitting himself for a less strenuous means of livelihood. Commercial courses or certain forms of vocational training approved by the Inspector of Auxiliary Classes may be followed by such patients. The auxiliary teacher should qualify herself to give vocational guidance to those who stand in need.

In sanatorium and hospital classes there are likely to be children with defective vision. For these sight-saving instruction as outlined in Chapter IV, Book III, should be provided.

Methods of instruction to be followed with up-patients in classrooms are much the same as those pursued in rural ungraded schools. Owing to the fact that out-of-doors contacts have been more limited than in the case of regular grade pupils, teaching should proceed in as objective a fashion as possible. Specimens and pictures should be used profusely in nature study, history and geography lessons. The making of posters, picture scrap-books, sand-table scenes, product maps, and other similar projects, are effective methods of helping children to visualize a little-known world.

The teacher of both up- and bed-patients will be confronted with the problem of providing adequate seat-work and, unless equipped with rural school experience, will find difficulty in effecting a solution. The problem itself is treated in some detail in Chapter VII, Book II, and the hospital teacher would do well to acquaint herself with suggestions there given.

In the hospital classroom the problem is rendered even more acute than in the case of the rural school owing to the fact that pupils are entering the institution from all over the province and hence are, necessarily, at different stages of advancement in their respective grades. There is a very great tendency to carry on entirely by means of individual instruction. In some instances this method of procedure is followed by a certain degree of success, but usually it is attended by a deadened classroom spirit and ultimately by retarded progress. Education is essentially a preparation for social living, and must be developed in a social atmosphere. Sickness tends to individualize children, and nowhere than in a hospital is it more necessary to develop a co-operative attitude and a spirit of comradeship. In the schoolroom, then, the teacher will endeavour to organize her pupils into as small a number of classes as possible.

Even in the wards a considerable advantage accrues from having the pupils study in groups. Arrangements may frequently be made to place in contiguous beds those taking approximately the same grade work. The pupils not only help one another, and thus progress more rapidly, but the community of enterprise increases their interest and adds to their joy of life.

It is a good plan to arrange the day's assignment in spelling, arithmetic, etc., in the pupil's own work book. This provides him with a definite programme for each day and enables him to carry on during the teacher's absence.

Many of the seat-work activities described in Chapter VII, Book II, especially those mentioned for junior grades, will be found applicable to hospital classes. For these same grades the usual equipment in the matter of plasticine, peg-boards, letter, phonic, word, and number builders can be used with advantage. *Reading Workbook for Beginners*, Dent & Sons, Toronto, and *Peter and Peggy* and the *Preparatory Work Book Accompanying Peter and Peggy*, Macmillan Co., Toronto, contain many valuable exercises in reading for primary pupils. *Round the Year* reader and *Workbook Accompanying Round the Year*, Macmillan Co., Toronto, afford similar help for Form I pupils. If copies of these workbooks cannot be supplied each member of the class, the teacher should have one copy to be used as a guide in preparing exercises.

For intermediate and senior grades the following are suggested as sources of seat-work and bedside assignment exercises. It should be noted, however, that these are to be regarded by the teacher in the light of aids, not guides. The assignment and correction of prepared sets of exercises, no matter how carefully planned and closely graded these may be, can never replace the inspiration and guidance of personal direction and teaching, nor do away with the necessity of adapting lessons to the requirements of particular groups of pupils.

*Friendly Stories* and *Workbook to Accompany Friendly Stories*. Macmillan.

*Make and Make Believe* and *Workbook to Accompany Make and Make Believe*. Macmillan.

A complete set of the *Opportunity Plan*. Nelson.

A complete set of *Reading Exercises*. Dent & Sons.

A complete set of *Workbooks in English Usage and Composition*. Dent & Sons.

A complete set of *Nature and Language Work Books*. Dent & Sons.

*The School*—Ontario College of Education.

*The Canadian Teacher* (fortnightly). Educational Publishing Co.

*The School and Home* (fortnightly), a little magazine for individual pupils published in four sections (Forms 1, 2, 3, 4) in connection with *The Canadian Teacher*, gives in convenient form many excellent assignments, especially for bed-patients.

Sets of supplementary readers in history and geography as recommended in Circular 14 should be available.

*The New Canadian Arithmetic*, Books 1, 2, 3. Dent & Sons.

*Number Highways* 1, 2, 3, 4, 5, 6, 7, Clarke, Irwin & Co., are helpful in planning arithmetic assignments.

Certain suggestions regarding method in each of the several subjects are given as follows:

## READING

Children who are in hospital for long periods seem to have a natural desire to read. It is an easy way to procure entertainment. For junior pupils the school typewriter writes short stories to paste in the school work book, usually personal ones, in which the child's name is used. For example:

Jean is in bed.
She can see a tree.
A robin flew to the tree.
The robin talked to Jean.
He said, "Cheer up! Cheer up! you'll soon be out to play with me."

Sometimes a picture is pasted in the work book, and a story written about it. A child takes a great deal of pleasure in these books, and as his possessions are not numerous, they are among his treasures.

The books of the supplementary reading courses are so numerous and delightful now, with their large printing and suitable illustrations, that children must want to read. The public library extends the privileges of the school classes to classes in institutions. However interesting outside material may be, children who learn to read in hospital, and who attend school there for the first time, entertain a high regard for "real school readers." It seems when they are reading from them that they are keeping up with their brothers and sisters at home.

Reading aloud and story-telling are most popular in these classes. There are many well-known rules about reading aloud. A harsh voice is hard to listen to when one is well, but it is a thousand times more irritating to the ear of the sick. Cultivate a soft, modulated speaking tone. Speak slowly enough to make it easy for the patient to catch every word without straining. Story-telling is an age-old idea. The story-teller must know the story and his audience. Earliest childhood, from 1 to 5, requires stories of familiar things and rhymes. Middle childhood, 6 to 9, tales of active imagination, and in the stage of advanced childhood, 10 to 12, when memory is so active, true stories of adult life are asked for.

Bible stories are among the best beloved in these classes, and it is well to have a book on hand, where a chapter may be read each day. Hurlbut's *Story of the Bible* is excellent for this purpose.

### Composition

In so far as letter writing is concerned, this form of composition comes readily to pupils in bed. There are the people at home who are anxious to hear of hospital happenings, and a child who is just as eager to write about them. Even smaller children desire to imitate their elders in the writing of letters, and frequently older pupils are willing to do the mechanics of writing for those unable to do so. These children, too, have more time for quiet imaginings than children able to run about, and the freedom of conversation gives ample scope for oral composition work.

### Writing

Formal writing lessons have no place in ward classes. Most of the pupils are in restricted positions, and so long as the writing is legible, the teacher should be satisfied. Indeed it is sometimes marvellous to view the results of their efforts.

The backs of hospital charts with the attached clip make excellent writing tablets for bed-patients. These are strong enough for the pressure of writing and the clip holds the book or paper in place. Adjustable bed-side tables are used as a surface for writing, and hospital trays serve the same purpose for the cots. Slates and small blackboards are procurable for children who are strong enough to hold them, but in most cases they are cumbersome.

In sanatoriums, where there are regular classrooms, the children are able to follow the prescribed course in writing. Correct posture is most important in such classes and must be stressed.

### ARITHMETIC

A practical application is desired. The advertisements in the daily newspaper with their price lists provide many imaginary journeys downtown, and many bills and problems are suggested. For beginners, flash cards, number drills, blocks, etc., are used as in the regular classes. Children enjoy counting games, dominoes, parchesi, etc.

### HISTORY AND GEOGRAPHY

To supplement History and Geography there seems to be an unlimited supply of story-books. These may be read by small groups in the class or given to bed-patients as reading material. Map drawing and colouring or the making of plasticine and product maps are greatly enjoyed. For children with defective vision, outline maps are done distinctly in India ink. No names are printed on them, numbers being used instead, and a chart is made to correspond to the numbers used.

### HEALTH

The teaching of health occupies a place of importance in the programme of these classes. The children see the value of cleanliness, good food, rest, and regular living exhibited from every angle. The rules of the Junior Red Cross are excellent to follow, and it is a good thing for hospital and sanatorium classes to link up with the work of this great organization.

## GAMES

Many of the active games of normal children can be modified to fit the abilities of the handicapped ones. Rhythm is especially valuable in spastic cases. The use of rhymes accompanied by rhythmic actions is a method of correcting speech defects in such children. The finger plays of the kindergarten are very popular with smaller children. Some of the simple folk dances and ring games have been adapted successfully to hospital classes, and in the playing of them many of the patients have overcome their fear of walking with new and unaccustomed splints and braces.

Good sportsmanship is taught in play, and this is a feature very necessary to stress in dealing with handicapped children.

The games and play of pupils in preventorium and sanatorium classes must be carefully supervised to avoid excessive fatigue.

Dramatization of stories can be readily undertaken and is greatly enjoyed by these pupils. *Children's Singing Games*, by Alice B. Gomme and Cecil J. Sharp, and *Six Fairy Story Game-Songs*, by Ida M. Cartledge, contain play activities easily adapted to hospital use.

## METHODS-OCCUPATIONAL

The hospital teacher may become acquainted with her pupils when they first enter the institution—even before they are able to attend classes or to do regular school lessons—by giving books to read, a puzzle game to work out, or, for the smaller children, pegs, beads or paper chains to make. These paper chains in all variations make a good occupation for a small sick-a-bed person. The paper is light to hold, bright in colour, and, when the chain is completed, it may be used to decorate an otherwise very plain hospital cot. Paper companies, lithographers, manufacturers of boxes, and wholesale stationery firms are often glad to supply sample books of paper.

Scrap-books are useful for children too young or too ill to read. Little children love to manufacture scrap-books, and suitable coloured pictures are abundant in magazines. Then, too, when a patient first enters an institution, there is usually a period of detention to avoid danger of any infection, and these books of bright pictures afford entertainment to the new patient.

One of the requirements for a teacher dealing with the physically handicapped is the possession of a fund of originality. She must not only be able to adapt material to the demands of various patients, but after this has been accomplished she must be able to change it to suit each individual case. There is no need to await a supply of special cutting paper, with a stock of paper towels in the hospital ward. Rows of dancing girls and boys are simply waiting to be cut "into life" from their paper folds. Soldier hats and weaving mats with weaving strips cut wide enough for the children to weave by hand, may be made. Even a village for the sand-table may boast that its houses and other important buildings were manufactured from the strong paper of the hospital towel.

Extensive equipment is not required. Old candy boxes grow into furniture—beds for dolls with curtains and quilts, tables with handsomely-fashioned tin-foil dishes. Tin boxes are enamelled and decorated. Doll's chairs are made from berry boxes. Fascinating hats are made from bright crepe paper with a picnic paper plate serving as a brim. Picnic cups with paper doilies make charming baskets to grace any occasion or to make a hospital tray look more attractive. Frilly paper cups that once held a sweet chocolate still hold an interest when they are transformed into daisies.

Odd pieces of material make patches for dolls' quilts or holders for hot dishes and pans. Clothespins grow into dolls, dressed in paper clothes, sometimes colonial dames with absorbent cotton wigs and paper lace doily dresses. Egg-shells make pretty dishes.

Paper-cutting provides an endless amount of pleasure. Postcards may be made into picture puzzles or else used as tickets to carry us far afield from hospital wards. Weaving, rake knitting, and cork work, all have their place. Paper bags make excellent masks by colouring, and cutting out the eyes, nose, and mouth. They also make good houses.

Crepe paper is a good medium for handicapped children, easy to fashion into artistic and pleasing forms.

Basketry and reed work are easy to do, results are quickly seen, and the occupation requires just enough muscular pull. Bookbinding is a little too advanced for the younger children, yet all enjoy making special booklets for various festivals, Easter, Hallowe'en, Christmas, or for special history topics, etc.

Working with plasticine is an ideal occupation for any child, and as an easy means of self-expression, it ranks very high. In these classes, it is necessary for each child to have his own supply. There is no such thing as the common clay crock. Crayons and colouring are always a source of profitable pleasure to children in bed.

Patients with cardiac trouble who are compelled to remain still may make things they can play with and move, such as cardboard people or animals which are light enough for the child to handle without strain or fatigue.

Susan E. Tracy has written a practical manual for nurses and attendants, called *Studies in Invalid Occupation.* Here are some of the general rules:

1. The occupation should be new, to arouse the child's interest, for there is an air of exciting intrigue about a new thing to do.
2. One occupation should not be followed to the point of fatigue. Do not make things too difficult. Give the child the joy of accomplishment without the stress and strain that lead to irritability, no small or tedious work involving eye-strain, etc.
3. Avoid aimless work. Even children like to feel a definite goal in the doing of some occupation.
4. The occupation should lead to an enlargement of the patient's mental horizon—a study and interest in associated things. Every boy goes through the period of collecting stamps, or stones, or moths. Let this interest lead on to reading and studying.
5. The teacher should participate in the occupation and should show an interest in it.
6. The child should be encouraged by praise, and even necessary criticism should be sugar-coated. Always remember you are dealing with sick children, and they are naturally more temperamental to reactions than normal, well children.

7. It is better for a patient to do even bad work than none at all.
8. Occupation must be suited to the individual and his requirements. All occupations are not good for all patients, for the nature of the work must depend upon the handicap and the ability of the individual child.

A sale of work stimulates the workers, arouses the interest of the public in the institution, and provides some capital which may be spent in various ways—to purchase extra materials and supplies for the class or to buy something for the classroom. Some system of remuneration may also be devised for the individual worker. An annual sale of work develops many business-like qualities in children who have had no experience along that line. Cost sheets of materials are kept, sales recorded, and the interest thus created is inestimable.

Any influences tending to broaden the handicapped child's experiences are to be commended. Many organizations are willing to aid in this manner. Motor drives and interesting excursions sponsored by various service clubs, patriotic societies, and junior leagues, furnish a great deal of material in this line to otherwise shut-in pupils.

However, we must never forget in our eagerness to do things for handicapped children that our real and supreme end is to make it possible by training, care, and education for them to do things for themselves.

### B. Institutional Classes for Social Variants

In Ontario four types of institutions have been established for socially varying children:

1. The hospital school for those so mentally crippled that they cannot with safety to themselves, or others, be permitted at large.
2. The training school for those presenting serious behaviour problems.
3. The industrial school for those committed for juvenile offences.
4. Orphanages, shelters, etc., for those who, lacking proper guardianship, cannot fend for themselves.

The Ontario Hospital at Orillia constitutes the provincial hospital school for the first type of social variant, the Training School for Boys at Bowmanville and for Girls at Guelph, the provincial training schools for the second. Since these institutions provide their own educational organizations, it is not the concern of the Department of Education to discuss facilities afforded, beyond the statement that in each institution a highly-trained staff of teachers is putting into effect a most carefully-planned programme with excellent results. Those desiring detailed information are advised to write to the superintendent of the institution for publications concerning methods and courses. Teachers of auxiliary classes will find in these publications many valuable suggestions applicable to their own classes.

Upon request by the governing body of an industrial school, orphanage, shelter, or other institution for social variants of the two latter-named types, classes may be established by a local school board which, with the approval of the Inspector of Auxiliary Classes, may be organized as auxiliary classes. The requirements for approval are adequate accommodation, proper equipment, and the engagement of a fully qualified teacher.

Ordinary school accommodation and equipment are provided and the regulation Courses of Study for Public and Separate Schools pursued with the following possible modifications:

1. Children suffering from serious vision deficiency may be instructed according to methods outlined in Chapter IV, Book III.

2. In both types of institution is frequently to be found a very considerable number of children whose low intelligence quotient and general school retardation would render them eligible for entrance to auxiliary training classes. For such, courses of study and methods of instruction as outlined in Book II should be followed. Where the population is sufficiently large, auxiliary training or promotion classes may be organized within the institution and conducted as such.

3. Boys and girls committed to industrial schools will rarely profit by completing the requirements of the Entrance Examination. For such as exhibit proficiency along school lines, the senior fourth course proceeding to the Entrance Examination will be followed in the hope that later some may use the certi-

ficate to enter secondary school or the night classes conducted by the vocational branch of the Department of Education.

For others it would seem advisable with the approval of the local inspector and the Inspector of Auxiliary Classes to somewhat modify the course for Form IV in such a way as to eliminate its more highly academic aspects while emphasizing and enlarging upon its more practical phases. Biography and civics might be stressed in history. A study of Canadian industrial geography might well be substituted for much of the physical, foreign, and map geography of the course. Literature might deal more extensively with magazine and newspaper articles and the reading of good novels with a view to establishing a desire for worth-while productions. Oral composition tending to develop efficient speech and effective address in ordinary business situations—applying for a job, dealing with a customer, conducting a telephone conversation, etc., might take the place of written literary compositions. Wherever possible the work of the academic school should be closely correlated with the several phases of vocational education.

The different plans and activities in connection with the institution might well form the core of various forms of vocational education. The kitchen, dining-room, laundry, barber shop, dormitory, farm, garden, lawn, engine-room, carpenter shop, paint shop, print shop, shoe-repair shop, tailoring and clothes-repair shop may serve as centres of instruction in cooking, dining service, laundry work, barbering, manicuring and hair-dressing, scrubbing and cleaning, farming, gardening, landscape gardening, janitor work, carpenter work, painting, printing, shoe-repairing, tailoring and pressing, etc.

The school population is usually divided into two equal groups, taking week about, the one, academic work in the morning and vocational work in the afternoon, and the other, the reverse. Each subdivision of the vocational group for the week should receive direct instruction along lines of an organized course of studies. To the same end it is desirable that the person in charge shall have taken at least a minimum course in vocational teaching.

## Chapter III

# CLASSES OF DUAL RESPONSIBILITY

### A. Visiting-Teacher Classes

VISITING-teacher classes are organized to span the breach between hospital discharge or other comparable recovery, and return to school of children convalescing from illness, operation, accident, or other disability which prevents attendance at school for a period of at least three months. Infantile paralysis, poliomyelitis, chorea, debilitating diseases, cardiac, and bone afflictions, together with operations and accidents, account for the majority of cases.

In large centres school boards may engage full-time teachers to give instruction to such shut-in children. The visiting teacher group is placed under the direction of an inspector, the supervisor of auxiliary classes, or the principal of one of the public or separate schools. An itinerary of visits is arranged by the director in consultation with the visiting teacher staff, due regard being given to the number of pupils enrolled and economy of time and distance. A complement of fifteen pupils is assigned each teacher. Instruction hours consist of not fewer than ninety minutes per week per pupil in not fewer than two visits, one preferably in the morning and the other in the afternoon. Where possible, it is better to give shorter and more frequent lessons to beginners, and more prolonged periods to seniors.

Transportation of the teacher is arranged for by the board either providing car fare or making a car allowance where a teacher uses her own car. Where pupils are scattered over a large area, the latter method of travel effects great economy of time.

In smaller centres of from 10,000 to 50,000 population, the board may engage the services of a part-time teacher. In school areas of less than 10,000 population, rural auxiliary home instruction units as outlined in Book IV may be established.

Children are enrolled for instruction under a visiting teacher by the auxiliary classes board upon a consideration of:

1. A certificate from the Director, Division of Child Hygiene, or the local school medical officer, to the effect that the child is suffering from a physical handicap which will prevent his taking advantage of instruction in the regular grades of the public or separate school for a period of not less than three months.
2. The child's school history as reported by the grade or hospital teacher and his health history as reported by the school nurse or hospital authorities on Forms A.C. 3 and A.C. 4.
3. Where deemed necessary the report of a mental examination conducted by a recognized officer and recorded on Form A.C. 3.

The accommodation varies according to circumstances in the home and the disability under which the child suffers, who may be an up-patient, wheel-chair patient or bed-patient. Arrangements are made by the teacher with the parent to have the child ready on time alone with the teacher and free from interruption during lesson periods.

In a large city where there is a staff of visiting teachers, a room in a convenient location should be fitted up as a central bureau. This room should be equipped with cupboard space, filing cabinet, typewriter, duplicator, supplementary readers, school supplies, and other ordinary or special school equipment. Such a central bureau saves duplication of materials and enables the teachers speedily to adjust equipment and supplies to meet the needs of frequent change in the enrolment. It also serves as a centre for the transfer of pupils to and from classes, and affords a meeting-place for discussion of methods and interchange of ideas so necessary in a new and comparatively isolated field of work.

The following list of equipment should be at the disposal of the teachers for the purpose of preparing assignments:

*Peter and Peggy.* Macmillan Co., Toronto.

*Preparatory Work Book to Accompany Peter and Peggy.* Macmillan Co., Toronto.

*Number Work Book for Beginners.* Dent & Sons.

*Seat-work for Primary Grades.* Macmillan.

*Reading Work Book for Beginners.* Dent & Sons.
*Round the Year Reader.* Macmillan.
*Work Book Accompanying Round the Year Reader.* Macmillan.
*Friendly Stories.* Macmillan.
*Work Book Accompanying Friendly Stories.* Macmillan.
*Make and Make Believe.* Macmillan.
*Work Book to Accompany Make and Make Believe.* Macmillan.
*Nature and Language Work Books* (complete set). Dent & Sons.
*Reading Exercises* (complete set). Dent & Sons.
*Work Books in English Usage and Composition* (complete set). Dent & Sons.
*Opportunity Plan* (complete set). Nelson.
*Canadian Teacher* (semi-monthly). Educational Publishing Co.
*The School.* Ontario College of Education.
*New Canadian Arithmetic,* Books I, II, III. Dent & Sons.
*Number Highways, 1, 2, 3, 4, 5, 6.* Clark, Irwin Co.

Many of the above may be purchased in sets of ten or twenty, to be used by individual pupils. When work books are so used, the exercises may be written on school paper by the pupil, rather than in the work book itself. *The School and Home* (semi-monthly), a little magazine for individual pupils, published in four sections (Forms 1, 2, 3, and 4), in connection with *The Canadian Teacher*, gives in convenient form many excellent assignments for shut-in patients.

In addition to the above the following equipment for individual pupils is suggested:

Blunt-nosed scissors; paste; crayons; paint; peg boards; letter, phonic, sentence and number builders; plasticine; crepe paper bearing illustrations of children in other lands, nursery rhymes, etc.

A supply of the following supplementary readers is suggested for the library:

*Our Little Reader.* Gage & Co.
*My First Primer.* Copp, Clark Co.
*Gateway Primer.* Macmillan Co.
*Work-a-Day Doings.* Gage & Co.

*Work-a-Day Doings on the Farm.* Gage & Co.
*Silent Study Readers, 1, 2, 3, 4.* Dent & Sons.
*Reading and Thinking, 2, 3, 4, 5, 6, 7.* Thomas Nelson Co.
*Play Story Geography.* Gage & Co.
*Canadian Neighbours.* Ryerson Press.
*Canadian Neighbourhood.* Ryerson Press.
*Highroads of History.* Thos. Nelson & Sons.
*Canadian History Reader.* J. M. Dent & Sons.
*Explorers, Soldiers, and Statesmen.* J. M. Dent & Sons.
*Story of the Earth and its People.* Thos. Nelson Co.
*Country Life Reader.* Macmillan Co.

The regular course of study for public and separate schools is followed, adaptations being made to suit individual requirements. The child may advance as rapidly as health permits.

As in the case of the hospital teacher, the greatest difficulty confronting the visiting teacher lies in the preparation, assignment, and correction of exercises. Many valuable suggestions may be obtained from the works listed above as equipment for the teachers' library. Other suggestions may be found in Chapter VII, Book II. Instructors should bear in mind, however, that ready-made exercises, however carefully prepared, can never replace the inspiration and guidance of personal teaching nor do away with the necessity of adapting exercises to individual requirements.

The co-operation of all in the home should be enlisted to secure favourable study conditions and to help with lesson assignments, especially in case of junior children.

The making of geography and history story-books, profusely illustrated with crayon drawings or cut-out pictures, constitutes an effective project correlating these subjects with composition, art, and manual training. Plasticine and cardboard modelling of historic and geographic scenes and activities is interesting and worth-while project work. Railway booklets on "Round the World Cruises," "Tours through Canada," etc., are valuable aids in teaching geography. Senior pupils may publish a newspaper, one contributing poetry, another a travelogue, etc., the teacher acting as circulation manager and carrier. Correspondence with other shut-in children motivates composition.

Encourage the child to make collections of leaves, seeds, stamps, etc. This may be the beginning of a hobby that will bring joy for years. The child should be linked up with the local branch of the public library, and encouraged to enter educational contests conducted by newspapers, magazines, and radio concerns. The teacher is sometimes the child's only contact with the world outside the home, and she should use every means to broaden his horizon and put him in touch with new experience.

### B. Open-Air Classes

The primary purpose served in the establishment of open-air classes, as distinguished from ordinary public and separate schools, is the physical well-being rather than the educational advancement of entrants. They constitute, in fact, preventoriums of the second degree for children:

1. Who have had tuberculosis in any organ or tissue, but in whom the disease is now inactive.
2. Who present no evidence of disease, but have been exposed to an active case of tuberculosis.
3. Who do not react to the test for tuberculosis, but show suspicious lesions.
4. Who have recently had cardiac trouble, chorea, or are suffering from serious respiratory-tract disease.
5. Who are thin, frail, anaemic, always tired or nervous without specified cause.
6. Who are mal-nourished.

The construction of buildings and their maintenance, together with the provision of health equipment supplies and service, would seem to be a concern of the Board of Health rather than the Board of Education. True the Board of Education would be compelled to furnish accommodation for these pupils in the regular public and separate schools, but since they come from all parts of the city and rarely more than one or two from any particular room, their inclusion in the regular schools would scarcely constitute a need for additional building, and certainly not for food and sleeping requirements and service. At present the cost is shared in varying degrees and without close regard to any particular formula by the several boards of education and health concerned.

The selection of candidates is identical with the procedure used in choosing pupils for visiting-teacher classes. It is not advisable for primary pupils to attend open-air schools, owing to the fact that they cannot with safety be allowed to travel alone the considerable distances sometimes involved, and it would not be a matter of good policy to discriminate between pupils living near a centre and those living at a distance.

Open-air classes are of three types: (1) the open-window class, (2) the open-air school, (3) the forest school, any of which may be organized as auxiliary classes with the approval of the inspector thereof. The requirements of approval are adequate accommodation, proper equipment, and the employment of fully-qualified teachers.

Open-window classes are established in smaller centres where not more than twenty-five pupils requiring this type of education are to be found, or in larger centres where, owing to geographic situations, it is not convenient to accommodate all candidates in one building. Where a new school is not being built, an ordinary classroom is used, one having a south or east exposure giving the best results. Pivot windows are installed on two, or, if possible, on three sides. The windows are made in three sections, and pivot to swing on a horizontal axis. They serve the purposes of air circulation and protection against rain. In case of driving winds the lower sections can be kept closed and the upper ones open. The room should be equipped with movable seats, which may be placed in line against the wall during rest hours and play periods. A screened-off area or a small adjoining room is equipped with running water and a hot plate for the preparation of cocoa and warm lunches.

The open-air school is established in large centres where several classes are to be accommodated. Usually the whole upper story of a public or separate school building is assigned to the open-air school, to provide the necessary classrooms, kitchen, dining-room, store-room, lavatories, play-room and rest-room. Where convenient, play and rest accommodation may be afforded during clement weather on the roof. Pivot windows as described above should be installed in the class-, play-, and rest-rooms. The equipment of classrooms with movable desks will render them usable as sleeping quarters during rest periods when required.

The rooms in both open-window classes and open-air schools may or may not be heated, but experience has shown that a measure of heat is necessary in damp or very cold weather. The temperature should probably range from 50 to 60 degrees. Children, if cold, are always allowed to put on extra garments, and provision made for frequent exercise eliminates the danger of chill from continual sitting.

Forest schools may likewise be established in large centres where there are sufficient candidates to form several classes. The site for a forest school should be fairly high and dry preferably the south-western slope of a hill among trees which afford shade from the sun and protection from the wind. There should be ample space for recreation and facilities for sun baths.

Accommodation should be inexpensive, but arranged in such manner that there is shelter provided for classes in inclement weather and also for the pupils while at their meals. This shelter may be a large tent open at the sides, but with curtains which can be let down should necessity demand. An open pavilion type of building is more expensive but more serviceable. Adequate lavatory accommodation and washing facilities must be provided. The kitchen must be under cover and so constructed as to minimize danger from fire. Covered storage must also be provided for cots and blankets, and separate tents or pavilion rooms for housing school and medical offices. Weather permitting, academic classes are conducted in the open on platforms equipped with blackboards, seats, and desks.

Open-window classes, open-air schools and forest schools should be specially equipped as follows:

A light simple cot for each pupil which can be readily handled by the child himself.

A warm blanket for each pupil.

Scales by means of which the weight progress of each child may be ascertained and recorded.

A gramophone, and in the two-school types, a piano for conducting games and exercises and to assist in community singing.

A cooking range and kitchen utensils. In the open-window class a hot plate may be substituted for the kitchen range.

Table-ware sufficient for each pupil and teacher.

Cupboards for the storage of food supplies, table-ware, kitchen utensils.

Cupboards or shelving for the storage of blankets.

Cupboard space, a filing cabinet, and a typewriter for the office.

The dining-room in an open-air or forest school should be equipped with tables and chairs and the kitchen with a refrigerator.

Children from a distance travel to the class or schools by street-car. Provision may be made for paying their fare by the board under whose administration the enterprise is placed. Pupils assemble at nine o'clock and remain until four, or in forest schools until four-thirty. In large schools a stagger system of dismissal avoids congestion of street-cars, and is more conducive to proper conduct on the cars. A hot lunch is provided at noon for pupils and teachers, the latter being continuously on duty throughout the day. This meal consists of hot soup or other hot nourishing food, a milk pudding, or fruit, bread, butter, and milk. Lunches of cocoa, bread, and butter are served in mid-forenoon and mid-afternoon. In open-air and forest schools the preparation and serving of meals and lunches necessitates the employment of kitchen and dining-room help. For forest schools a caretaker must also be engaged. In open-window classes dining arrangements may be effected more simply, the children bringing their noonday lunches, the board supplying cocoa, milk, bread, and butter.

The open-window class is organized along lines of a rural ungraded school; the open-air and forest schools along lines of a small graded or semi-graded urban school. The maximum enrolment per class is twenty-five in case of the former, and thirty in case of the two latter.

The school medical officer and the school nurse visit the classes regularly. The weight of each pupil is taken at weekly intervals, and recorded graphically in comparison with the normal weight progress line of a child of his age.

In the case of open-window classes and open-air schools the school year and the school day coincide with that of the regular grades. Forest schools are conducted six months of each year, commencing May 1st and continuing until October 31st, including Saturdays and holidays. At the conclusion of this period, pupils return—a few to open-air schools, the majority to regular grade. It may be noted that in some other countries forest schools are operated only during the summer holidays, the pupils returning to open-air schools or regular grades during the school year. This arrangement permits the employment of regular grade teachers, and eliminates the expense of an additional staff. It likewise permits the more extreme cases to enjoy the advantages of open-air treatment throughout the entire year.

The regular Course of Study for Public and Separate Schools is followed, emphasis being placed on essentials, since the school day is shorter than in ordinary classes owing to rest periods, and since the purpose in academic teaching is largely to enable pupils to return to the regular grades with the minimum retardation. As the pupils are gathered from many schools all over the city, the teacher will find difficulty in effecting an equable classification. There is always a tendency to drift into a system of individual instruction. In many instances where pupils have fallen behind in one or two subjects owing to their disability, the bestowal of special attention is beneficial and commendable. But, on the whole, the effect of individual methods of instruction is to deaden the class, retard progress, and accentuate the natural non-social tendency in sick children.

Health teaching is emphasized by play and story methods. Personal hygiene is taught and practised as part of the daily curriculum. All teaching must be subservient to the health requirements of the child.

On the following page are given two typical time-tables:

### Time-Table for a Fourth Class—Junior and Senior in an Open-Air School

| | |
|---|---|
| 9.00- 9.10 | Opening Exercises and Inspection. |
| 9.10- 9-35 | History and Geography, alternate days. |
| 9.35- 9.45 | Cocoa with brown bread and butter. |
| 9.45-10.15 | Arithmetic. |
| 10.15-10.20 | Physical Training. |
| 10.20-10.45 | Composition and Grammar, alternate days. |
| 10.45-11.00 | Recess. |
| 11.00-11.30 | Spelling and Dictation. |
| 11.30-11.50 | Health Education and Nature Study, alternate days. |
| 11.50-12.00 | Making beds and washing up for dinner. |
| 12.00-12.30 | Dinner. |
| 12.30- 2.30 | Rest hours. |
| 2.30- 2.45 | Recess, making up beds and putting desks in place again. |
| 2.45- 3.10 | Reading and Literature. |
| 3.10- 3.30 | Writing. |
| 3.40- 3.50 | Milk or cocoa. |
| 3.50- 4.00 | Preparation for home. |

### Forest School Time-Table

| | |
|---|---|
| 9.00- 9.20 | Opening Exercises and Inspection. |
| 9.20- 9.45 | Academic work. |
| 9.45-10.00 | Bread and milk, and making of beds. |
| 10.00-10.30 | Singing or informal teaching. |
| 10.30-10.45 | Recess. |
| 10.45-11.30 | Academic work. |
| 11.30-12.00 | Wash drill for dinner. |
| 12.00-12.30 | Dinner. |
| 12.30- 1.00 | Tooth-brush drill and recreation. |
| 1.00- 3.00 | Rest period. |
| 3.00- 3.30 | Organized school activity or games. |
| 3.30- 4.00 | Bread and butter with cocoa or milk. |
| 4.00- 4.30 | Academic work. |

The forest school lends itself to less formal teaching than in other classes. Geography and nature study can be taught first-hand. Models of districts studied in geography and history may be made in sand. Historical tableaux and pageants can be readily arranged, costumes being improvised, and nature providing the stage setting. Gardening, either as a group or individual activity, lends itself to the curriculum. Community singing, harmonica, and rhythmic band work are greatly enjoyed by the pupils.

### C. Orthopedic Classes

Orthopedic classes are organized for children who are crippled from spastic paralysis, infantile paralysis, surgical tuberculosis, traumatic deformities, congenital deformities, etc., but whose physical disability has reached a static condition which permits them to profit by instruction given in public and separate schools, though it prevents them from attending without the provision of special transportation facilities and special school accommodation and equipment. These classes are established for the express purpose of training children academically and vocationally for effective citizenship and not for the purpose of affording medical treatment. For this reason they would perhaps more properly be classified under the caption, "Classes of major educational responsibility." Nevertheless, since the majority of these pupils, though not under medical treatment, are more or less under medical supervision, and since there are frequent transfers to and from hospital, visiting teacher, and open-air classes, it may not be amiss to consider orthopedic classes in this chapter.

Candidates are admitted by the auxiliary class board upon consideration of:

1. A certificate from the Director, Division of Child Hygiene or the School Medical Officer to the effect that the child suffers from a physical disability which warrants his placement in an orthopedic class.
2. A record of the child's school history and health history as reported by the grade or auxiliary teacher and by the school nurse on Forms A.C. 3 and A.C. 4.
3. Where necessary, the record of a mental examination conducted by a recognized official and reported on Form A.C. 3.

Candidates eligible for auxiliary training classes should be placed in such rather than in orthopedic classes, since they will be unable to profit by the courses given in the latter.

The cost of transportation is borne by the Board of Education who become entitled to a reimbursement grant from the Department toward such expenditures. Two methods of transportation are used:

1. The school board may make arrangements with a local transportation company to convey the children to and from school. This method usually entails the employment in addi-

tion to the driver, of an assistant, whose business it is to help children in and out of the bus.

2. The school board may rent or purchase a bus and operate it themselves. The latter method is usually the less expensive, the board being in a position to engage a driver who is likewise competent to fulfil the duties of assistant.

School hours vary from those of regular classes, owing to the incidence of transportation. Two systems of assembling are in vogue:

1. When the busses are provided in sufficient numbers to enable all pupils to arrive and leave at the same time, the school day is shorter, both morning and afternoon, since the busses have to take time to cover a large area.

2. When a smaller number of busses is provided, the stagger system may be used. Part of the school assembles at nine and dismisses at two-thirty, the other part arrives at ten and departs at three-thirty.

It is obvious that these children must lunch in school. A number of plans have been operated successfully:

1. The children bring their own lunches.

2. The children bring their own lunches. Milk, cocoa, or soup is provided by the school board.

3. A hot lunch is prepared by a matron and assistants employed by the board, the children paying the actual cost of the food.

4. The preparation and serving of a luncheon is made part of the training course for senior girls in household science. The cost of all or part of the material used is paid by the board. This method is economical, and has been found satisfactory in small schools.

The ideal school specially constructed for orthopedic classes would differ considerably in design and equipment from the ordinary school building. Where the ideal is impossible it may be approximated.

An ordinary size classroom or suite of rooms may be used. It should be situated on the ground floor and so located as to receive the maximum amount of sunshine. The matter of lighting is a particular consideration in case of orthopedic pupils, who will remain in the same room throughout their school career.

Access to the classroom must be specially constructed. The door opens directly on the play-ground and is approached by a ramp of slight inclination for the easy movement of children and wheel chairs. To avoid danger of collision, doors leading from all rooms are of clear glass and provided with hand rails for support and ease in operation. Hand rails are also provided for cloak-rooms, halls, drinking fountains, etc. Floors are covered with heavy linoleum to minimize injury from falls, and to subdue the noise of crutches and braces. Floors so covered are readily cleaned and render the room more sanitary. Special lavatory accommodation is provided, convenient to the classroom, easy of access, and equipped with hand rails. The windows in the classrooms are low, so that the smallest child may see out-of-doors. Ample space should be provided for special physical training and recreation. In a single class this may be accomplished through the selection of a large room. In a school consisting of several classes, a separate room should be provided for this purpose.

The classrooms are equipped with regulation furniture save in the matter of seating. A combined and adjustable seat and desk easily moved but not easily upset is used for this purpose, the most satisfactory type being one of tubular iron construction. An extra low blackboard is provided for the small child who must sit while at work. A couch or other comfortable resting-place is available for the child who tires easily. Equipment should make it possible for children to get a drink at any time without interrupting the class.

The kitchen in an orthopedic school is equipped with sink, range, chairs, cupboards, refrigerator, utensils, dishes, etc. In a single class this equipment may be modified to circumstances of accommodation and methods of lunching.

Where practice in the physical training and special exercise room is carried on under medical direction for therapeutic purposes, it would appear that the cost of equipment and the maintenance of the practitioner are responsibilities of the medical department. Where practice is in charge of an auxiliary class teacher specially trained for the work, and the end in view is development of muscular co-ordination adequate to the activities of academic and vocational education, responsibility is assumable by the Board of Education. Equipment for the latter purpose will depend upon the size of the school and the requirements of individual pupils. The following items are suggested:

Elastic chest expander—arm and chest exercises
Bicycle stand and bicycle—leg and feet exercises
Double pedal grindstone—leg and feet exercises
Pedal sewing-machine—feet exercises and vocational training
Pier-glass—walking exercises and posture
2 Badminton racquets—arm and leg exercises
1 Piano—finger exercises and games
1 Walker—teaching to walk
1 Chair with casters or wheels—walking exercises.
Foot and hand loom—leg, arm and hand exercises
Equipment for woodwork, reed work, leather work, bookbinding, as specified in the lists of Book Two—arm and hand exercises and vocational training.

In a single class the maximum enrolment is sixteen, and the organization is similar to that of a rural ungraded school. In units made up of several classes, the maximum enrolment is twenty, and the organization is similar to that of a small semi-graded urban school. The making of a time-table will depend to some extent upon the method of transportation adopted. Where the bus brings pupils in nine and ten o'clock shifts and takes them in two-thirty and three-thirty o'clock shifts, the first and the last hours' lessons will be repeated, except where the area is limited, and the bus can pick up certain classes on the first trip and others on the second.

The Course of Study is identical with that pursued in the Public and Separate Schools. Where fifth form work is undertaken, it is advisable to pursue the commercial rather than the academic courses, since the former would seem to provide suitable vocational training for many of the pupils. It is hoped in time to provide further vocational training facilities along such lines as optical work, watch repairing, fine needlework, commercial art, etc.

Many of these pupils suffer through lack of muscular co-ordination and are, therefore, unable to carry on the manual activities involved in the school programme—writing, drawing, etc. It is essential that a highly specialized course in physical training be organized to fit them to take part in these necessary activities. The equipment specified above may have to be enlarged to suit individual cases by the making of simple pieces of apparatus from common and easily obtainable articles—buttons and button holes on cloth frames, domes and fasteners on cloth frames, building blocks, tin dishes etc. The following exercises are suggested:

1. *Tongue, throat, lip, and jaw muscles.* Blowing horns, soap bubbles, candle flames, etc. Washing lips and face with the tongue. Pointing tongue and putting it where directed. Relaxing throat and jaw muscles, yawning, opening and closing jaws and lips. Speech correction exercises (see Chapter 6, Book III).

2. *Arm and hand muscles.* Muscular games involving large arm and hand movements. Games with large blocks. Writing with large size pencils. Setting the table with unbreakable dishes. Buttoning, hook-and-eying, dome fastening and tape-tying two cloth frames together. Playing the piano for finger movement. Rhythmic marking and drawing on the blackboard in time with music. Erasing marks from the blackboard. Opening and closing doors, moving chairs, turning on and off taps. Playing with bean bags, rough surfaced balls, footballs, etc. Carrying cups full of water. Woodwork, plasticine work, loom work, basket work, reed work, cord work, etc.

3. *Leg and feet muscles.* Where the child cannot walk, the following sequence may be followed:

(1) Leg exercises.
(2) Learning to fall safely by jerking the head forward.
(3) Balancing exercises.
(4) Walking with the aid of the walker and the chair equipped with casters.
(5) Walking with the aid of crutches.
(6) Walking with the aid of a cane.
(7) Walking before a pier-glass to correct movements.
(8) Bicycle grindstone and loom exercises to strengthen muscles.

(9) Walking an inclined plank.
(10) Climbing stairs.
(11) Skipping.
(12) Playing badminton to get forward and backward movement control.

Big toe muscles which lift the foot from the floor may be developed by ringing suspended tin pans; heel muscles by ringing a press bell below the heel, ankle movements by operating a sewing machine.

The moment a child does one new act of walking or using his hand, he becomes more confident, and is encouraged to try something harder. The teacher never helps him to do what he can do for himself. Gradually, though sometimes very slowly, he gains control over speech, walking, writing, and other movements.

Up till this time the child has been waited on and sheltered in the home. Now he is ready to take some part in life. A suitable task is given by the teacher (dusting, making bed, dressing himself, washing dishes, etc.), and the parents are requested to co-operate. Often the parents themselves must be educated to understand that pampering spoils the child. Soon he develops an independent attitude (usually to the dismay of his parents), and begins to help others in the home. No single phase in the education of an orthopedic child is so important as the development of a spirit of confidence and independence.

## CHAPTER IV

# SIGHT-SAVING CLASSES

### A. PURPOSE OF THE CLASS

SIGHT-SAVING classes are organized to meet the educational needs of children whose sight deficiency prevents them from making satisfactory progress in school, even when they are provided with proper glasses and placed in front seats, or children whose vision would be further impaired by the use of ordinary textbooks and the pursuit of regular methods of instruction.

The establishment of such classes is of benefit to:

1. The handicapped child, by affording him regular academic training, while conserving his sight, and by overcoming habits of inattention, bad posture, and psychotic-neurotic tendencies which vision deficiency is likely to foster.
2. The normally-sighted child, by relieving the regular grade teacher of the necessity of devoting a disproportionate amount of time to handicapped children.
3. The educational system, by eliminating that group of repeaters who fail to make grade on account of defective visions.
4. The community at large, by training children, handicapped through sight deficiency, to become useful and self-supporting citizens.

### B. TYPE OF PUPILS

To understand the special needs of her pupils, the teacher of a sight-saving class should have an acquaintanceship with the various forms of vision deficiency.

The eye is an organic automatic camera which receives stimuli relative to size, shape, distance, motion, and colour, and which transmits these stimuli to the brain by means of the optic nerve, to be there combined into pictures, interpreted, and more or less permanently recorded.

The inside of the eye is divided by the *lens* into two compartments, each of which is filled by a watery transparent fluid. The posterior-chamber is about four times the size of the anterior chamber.

Surrounding the eye is a strong tough coat, white in colour except at the front, where it is transparent. The whole coat is called the *sclera*. The front transparent part is called the *cornea*.

The sclera inside is lined by the *choroid* membrane which contains blood vessels, nerves, and pigment. The pigment makes the posterior chamber of the eye dark. The choroid lining, continued forward to cover part of the front of the lens, forms the *iris* or curtain which automatically regulates the amount of light that may enter the posterior chamber through the lens. The pigment of the iris gives the eye its colour. The circular opening of the iris through which light enters is known as the *pupil*.

The posterior portion of the choroid is covered by a sensitive screen, the *retina*. This screen is the receiving station for colour impressions. If the individual is to see distinctly, all rays of light entering the eye through the cornea, pupil, and lens, must come to a focus on the retina; the more imperfect the focus, the more blurred the vision. The focusing of rays of light on the retina is adjusted from moment to moment by the action of the *ciliary muscles* in changing the shape of the lens, the body of the eye itself, or both. Further accommodation of the eye to sight is provided by muscles which move the ball to and fro, up and down, or in a rotary direction. It is probable that kinesthetic sensations arising in connection with the various muscular movements of vision, are prime factors in the interpretation of shape, size, distance, and motion.

The cornea is protected by: (1) the *eyelids*, which entirely exclude light and which serve also as wiping cloths during the automatic intermittent motions of winking, (2) the *eyelashes*, (3) the *conjunctiva*, which lines the under side of the lids and is carried on the sclera as far as the cornea, (4) the *lachrymal glands* located beneath and to the outer side of the upper lid. The fluid secreted by these glands after washing the cornea is carried by the lachrymal duct into the nostril, where it moistens the nasal membrane.

Effective vision is possible only where these various parts are perfect in their structure and harmonious in their functioning. Poor vision may be the result of faulty structure, diseased conditions, lack of co-ordination of nerves and muscles, or injury of the eyes.

### FAULTY STRUCTURE

1. *Myopia*, or near sight, is one of the common causes of defective vision. In myopia the eyeball is shorter in the horizontal axis than normal. Rays of light from objects at a distance are brought by the over-round eyeball to a focus in front of the retina, causing blurred images. Rays of light from objects at close range are focused on the retina giving more or less clear images. Near-sighted children in school have difficulty in seeing work placed on the blackboard. They likewise tend to bury their faces in text and exercise books. By squinting, myopes can see things somewhat more clearly, but the assistance thus obtained is very slight. Fitting the child with properly adjusted glasses affords the only real help.

Myopia is often hereditary, but rarely congenital, developing generally between the ages of six to ten years. Its appearance at this time in an eye formerly normal may be caused by ill-health, injury, or unusual strain, as well as by the development of some hereditary maladjustment which interferes with proper focusing on the retina.

Myopia exhibits a marked tendency to become progressive. The degree of near-sightedness increases from year to year. Even though remedial measures are applied, the eye may become so badly damaged as to no longer possess useful vision.

Myopes, on account of their failure to see at a distance, develop a distaste for outdoor sports and acquire a marked liking for reading, painting, or other close work. This tendency is detrimental alike to their vision and general health. They often develop a stupid expression and a shyness of behaviour.

In the classroom, myopes should be taught largely by oral methods of instruction. Periods of close work should be short, with frequent intervals of rest. Physical exercise and work involving bending or stooping should be avoided. Prolonged eye work should be discouraged, and outdoor sports and occupations encouraged.

2. *Hypermetropia*, or far-sight, is the exact opposite of myopia. The eyeball is longer in the horizontal axis than normal. Rays of light tend to focus behind the retina, especially diverging rays from objects at close range. This is a common cause of deviation from normal sight, but the defect is not so serious as in the case of myopia. Happily the eye is equipped with a mechanism called the ciliary muscle that enables it to bring rays of light to a shorter focus. The constant use of this muscle at close work causes it to become weakened, and the resulting strain leads to headache.

As a result of their inability to get accurate images at close range, hypermetropic children often lack concentration and frequently suffer from headache. They should wear glasses while studying, but when away from close work can safely do without.

3. *Astigmatism* is an error of refraction arising from defects in one or more of the eye's refracting surfaces, usually the cornea. Rays of light entering the eye fail to meet in a sharp point on the retina. The focus, being vague, the resulting images are blurred and obscure. In reading, the letters of a word seem to run together.

It is a very common cause of defective vision, resulting in headache, fatigue, and eye-strain. In the majority of instances, astigmatism can be corrected by satisfactory glasses.

## Disease Conditions or Accidents

1. *Keratitis*, or eczema of the cornea, is found in scrofulous children, or sometimes follows certain severe debilitating diseases. Ulcers form on the cornea, and while these usually heal, they frequently leave scars that impair vision. This disease demands attention and, if neglected, leads to serious eye trouble.

Interstitial keratitis affects the deeper layers of the cornea, and may convert it into a perfectly opaque membrane. The disease starts with a salmon patch and grey spots on the cornea, and gradually spreads backward into the interior of the eye. The most common causes of this form of keratitis are syphilis and tuberculosis. Early diagnosis and persistent treatment will often result in the restoration of near-normal vision.

2. *Conjunctivitis.* There are various forms of conjunctivitis, a disease that affects the conjunctiva.

(1) *Ophthalmia Neonatorum.* This is the inflammation of the conjunctiva of the new-born babe, and is responsible for much of the blindness throughout the world. This disease is usually the result of neglect during the first few days. Ulcers and scars form on the cornea. It is highly communicable, and children and adults may be infected by contact with the discharge.

(2) *Trachoma or granular conjunctivitis.* This is another condition which seriously affects the vision of those afflicted. It, also, is very communicable. The condition is commonly found among school-age children in areas where the disease is prevalent. The diagnosis is difficult, and treatment is unsatisfactory. These children should not be in attendance at school, owing to the contagious character of the disease.

(3) *Pink Eye.* This is a conjunctivitis that starts with a redness of the lids and an increase in the flow of tears. There is a discharge that is contagious. Ordinarily, after a few days the eyes make a complete recovery. If neglected, the disease may result in corneal ulcers that will affect the vision unless immediately treated.

3. *Cataract.* This disease, a cause of much distress, may occur at any period of life, but is generally seen either in infancy or old age. It is often hereditary, particularly when found among the younger age groups. Cataracts, especially in younger children, may be removed without serious impairment of the vision.

*Blepharitis.* This is an inflammation of the margin of the lids, occurring in both children and adults. A crust is formed on the lid, causing ulcers. The hair follicles may become involved, the lashes fall out, and styes appear. If neglected, this disease may lead to trouble. It is often associated with impaired vision.

*Albinism.* This is a lack of pigment in the choroid and the iris. The iris presents a pinkish colour, due to the reflection of light from the blood vessels in the interior of the eye. Vision is usually much disturbed on account of lack of protection. This condition is usually hereditary and is incurable.

### LACK OF CO-ORDINATION

*Strabismus, or cross-eyes.* Under normal conditions, both eyes are directed upon the same point at the same time, but where the muscular condition of the eyes has become weakened by malnutrition, disease, or other cause, this is not always the case. One eye may be fixed upon an object, while the other is temporarily thrown out of focus.

This affliction usually occurs early in life and can generally be corrected with glasses. If neglected, it not only disfigures the individual, but impairs the vision of the crossed eye.

*Ptosis* is a falling of the lids, caused by the nerves that elevate the lids becoming paralysed. This condition gives the individual a drowsy appearance, and necessitates the throwing back of the head to obtain clear vision.

### MISUSE

The following abuses of the eye are frequent causes of poor vision:

1. Improper light or glare from excessive light.
2. Improper use of light.
3. Too prolonged use of the eyes.
4. Too fine print or too close work.
5. Faulty posture.

### SELECTION OF CANDIDATES

1. Since the organization and maintenance of auxiliary classes are matters within the autonomy of individual school areas, the initiative in the formation of a sight-saving class must be taken by the local school-board.

2. The school-board makes formal application to the Minister of Education, requesting that a free survey relative to the formation of a sight-saving class be conducted throughout certain or all the schools within its jurisdiction.

3. On the request of the Department of Education, the Director of Child Hygiene may conduct a preliminary screening.

4. Candidates selected by teacher and nurse during the preliminary screening are examined by an oculist appointed on the advice of the Director of Child Hygiene and approved by the Inspector of Auxiliary Classes, and where considered necessary a mental examination is administered by an approved examiner.

5. With the approval of the Inspector of Auxiliary Classes the pupils for the sight-saving class are selected by the auxiliary class board upon a consideration of the reports submitted by the oculist, the school nurse and the grade teacher.

6. When vacancies occur in an established class, the school nurse, grade teachers and principals will make a preliminary selection of all likely candidates. The nurses will do a rough screening and all probable and doubtful candidates will be examined by an oculist. With the approval of the inspector of auxiliary classes the final selection will be determined by the auxiliary class board upon a consideration of the reports submitted by the oculist, the school nurse and the grade teacher.

It is impracticable if not impossible to define specific limitations of eligibility, owing to the fact that outside the district of vision for which the child has been examined, other conditions enter into the situation, such as the child's general health; whether the defect is stationary or progressive; the pupil's grade, senior work making greater demands upon vision than primary work; and the pupil's ability. In general the purpose of these classes will be better satisfied by such selections as may be agreed upon by the auxiliary class board in consultation with the local oculist, the school nurse, and the grade teacher.

Children below 75 I.Q. should be placed in auxiliary training classes rather than in sight-saving classes. The manual and academic work of the training class do not demand severe visual effort. The special academic programme of the training class is better adapted to such a pupil's learning ability than the regular grade Course of Study as taught in the sight-saving class.

The grade teacher is likely to be first to detect symptoms suggesting eye trouble. A busy school nurse often has to depend upon the teacher's report. Enumerated below are some of the danger signals of visual deficiency to which the grade teacher should give attention:

1. Recurring headaches.
2. Holding a book too close to the face, or bending over it.
3. Watery eyes.
4. Sensitiveness to light.
5. Scowling or screwing up of the eyes.
6. Inflammation of the eye or lid.
7. Backwardness or nervousness.
8. Moving around in the seat to see the board.
9. Complaints of feeling tired.
10. Inattention.

## ORGANIZATION OF CLASSES

The maximum enrolment of an ordinary sight-saving class is 16. Where the pupils are all above Form II or below Form III, with the approval of the Inspector of Auxiliary Classes, the enrolment may be increased to 20. In a city where there are two or more sight-saving classes, it is advisable to attempt the above-mentioned division of forms between or among the classes, both from the standpoints of efficiency and economy.

The whole class is organized and conducted much after the fashion of an ungraded rural school, except that in sight-saving classes, children, especially those in senior grades, may be sent to the regular classrooms for lessons which require no reading and but little writing. This interchange of rooms serves to stimulate competition, to eliminate the atmosphere of segregation, and to keep sight-saving pupils in touch with companions of their own age, and so further that wholesome and important phase of education gained through social contacts.

To obtain the best results from this interchange of rooms, there should be the fullest co-operation between the sight-saving teacher and the teacher of regular grade. When the grade teacher realizes that the taking of a sight-saving pupil from her class relieves her of one of her greatest problems, saves her patience and energy, and prevents her class standard being lowered by the inclusion of a repeater, she should feel well recompensed for the slight additional work required by the presence of these visitors. She should likewise see that assignments in the regular grade are forwarded to the sight-saving teacher, so that the latter may know what is to be expected of her pupils. This she may easily do by making a carbon paper copy of her own entry or by having the sight-saving visitor copy dictated assignments in large writing on his special paper.

On the other hand, the sight-saving teacher must prove that her work is of value, and must assist the grade teacher in every way. She must not allow lax discipline in movements from room to room. Since but little homework should be expected from sight-saving pupils, she must see that assignments given in the regular grade are properly prepared during school hours. She should be careful neither to forestall nor to repeat work taken in the regular grade, as this may cause the pupil to become inattentive in his visiting classroom. She should realize that a special pupil, if properly looked after, may top the class and so stimulate him to efforts of worthy ambition while on his visiting rounds.

The time-table of a sight-saving class will differ but little from one which satisfies the requirements of an ordinary ungraded rural school, save that the programme makes provision for rest periods and more frequent change of study activities.

The following suggestions concerning the organization of time-tables and study courses have been found to function successfully in a number of sight-saving classes: Music and physical training are taught as whole school lessons; nature study and hygiene are taught either as whole or half school (junior and senior) lessons; writing, art, and spelling dictation lessons are given concomitantly to several grades, different models for different groups being used in the first two subjects, and words for spelling being dictated in successively recurring sequences to grades 7, 6, 5, and 4; grades 4 and 5 (junior and senior third) are combined for geography lessons, grade 4 geography being taught during one year and grade 5 geography the following year.

## Accommodation

Much care should be taken in selecting a room for a sight-saving class. Because fewer pupils occupy it, is no necessary reason why it should be smaller than an ordinary classroom. There must be ample space for the changing of desks, tables, and chairs to secure the best adjustment to light during different parts of the day, and to move classes nearer the blackboard during recitation periods. A considerable floor area is needed for the games and active exercises of rest periods. Since a short period of work requires the expenditure of a great deal of nervous energy on the part of a child suffering from defective vision, rest periods should be frequent and varied; and adequate variation in the form of relaxation exercises requires the use of a fair-sized room. Since many seat-work assignments must be written in large hand on the blackboard, and since sight-saving pupils make frequent use of the blackboard in doing their exercises, even more blackboard space than is found in the ordinary classroom will be required. A consideration of these several points leads to the conclusion that an average sized classroom of from 700 to 900 square feet is none too large.

As light from the north is most constant, a room with a north-east exposure is best. An eastern exposure is next best. To avoid cross shadows, light should be admitted from only one side of the room. The total window area in use should be not less than one-fifth of the floor area. Windows should not be more than three feet three inches from the floor, nor more than ten inches from the ceiling. There should be a clear space of seven feet at the front of the room to prevent blackboard glare. Seats and desks should be so arranged that light comes from the left rear of each pupil.

Dark green blinds are restful to the eye, but exclude too much light. Buff shades that diffuse light, are best. The most satisfactory results are obtained by providing two shades for each window, operated by double rollers placed near the middle. Even the best shades will not properly diffuse nor control sunlight unless adjusted to meet varying intensities of illumination from time to time during the day, and from day to day during the year.

In a room 24 feet by 30 feet, there should be from four to six fixtures for artificial lighting, providing about 2½ watts of light per square foot of floor space. They should be of the indirect type and placed low enough to spread light over the whole room. On grey days, the shades should be opened to the top of the windows. On very dark days, it is best to lower the blinds and use artificial light only.

The colour tone on walls should be light buff or French grey; on ceilings white or light cream. Both should be in dull finish. The woodwork should be light-coloured wood, also in dull finish. A dark wood absorbs light, and a glossy finish causes an irritating glare.

Blackboards absorb light that should be diffused throughout the room; chalk dust constantly breathed by children irritates their throats and lungs; erasers are germ carriers, and the cloth sometimes used to clean the board is unsanitary. Were large rolls of light-coloured paper to be substituted for blackboards, conditions would be ideal. Since, however, blackboards are still with us, they must be put to the best possible use. They should slant outward at the base, and be so placed in the room as to have a minimum amount of glare. The foot of the blackboard should be not more than twenty-four inches from the floor and twelve square feet should be provided for each pupil in the room. Where there is not sufficient blackboard space, roller blackboards may be obtained. To prevent absorption, light-coloured curtains may be drawn over that part of the board which is not in use.

## EQUIPMENT

Seats and desks of a movable type should be provided, in order that pupils, when necessary, may draw near to blackboards and charts, or may shift position to take advantage of the best light during different parts of the day. They should likewise be adjustable, so that the children will not have to strain their eyes by bending over a level desk. The Moulthrop type of desk meets these general conditions.

(Should movable desks be provided, one which may be tilted and which is furnished with a slight ledge all the way across the front to retain books and other work material is much to be preferred.)

Since children in a sight-saving class require more equipment than pupils in a regular grade, more cupboard space should be provided. Two cupboards, 7 feet high, 4 feet wide, and 20 inches deep, are desirable. An index cupboard, 3 feet 6 inches high, 2 feet 2 inches deep, and containing 12 vertical compartments, 3 inches wide, is convenient for the storage of lesson exercises made out on large sheets of cardboard.

A large type typewriter is of great assistance to a sight-saving class. The teacher is able to prepare exercises and copy selections from books. Provided the touch system is used, the pupils can type work on it with a minimum amount of eye-strain. Such a machine can be obtained from either the Remington or Underwood Companies. The Remington is number 48, type 360. The Underwood is designated as the typewriter especially prepared for sight-saving classes. Care should be taken to see that both capital and lower case letter forms are to be found on the keyboard. A machine furnished with capital letter forms only is not suitable. A table about 24 inches high should also be provided. If too high or too low, the correct position necessary to efficient work and conservation of vision cannot be sustained.

Following is a list of supplementary reading books printed in large type that may be obtained from The Clear Type Publishing Company, 36 Elston Road, Upper Montclair, New Jersey, U.S.A.

Primer—
*Aldine Reader, Primer*
*Winston Reader, Primer*

Senior First—
*Elson Reader, Book I*
*Winston Reader, Book I*
*Learn to Study Reader, Book I*

Second—
*Winston Reader, Book II*
*Learn to Study Reader, Book II*
*Elson Reader, Book II*

Junior Third—
*Elson Reader, Book III, Vol. 1*
*Learn to Study Reader, Book III, Vol. 1*

Senior Third—
*Elson Reader, Book III, Vol. 2*
*Learn to Study Reader, Book III, Vol. 2*

Junior Fourth—
*Elson Reader, Book IV, Vol. 1, 2 and 3*
*Learn to Study Reader, Book IV, Vols. 1, 2 and 3*

Senior Fourth—
*Selected Verse, Vols. 1 and 2*
*Learn to Study Reader, Book V, Vols. 1, 2 and 3*
*Everyday Classics, Vols. 1, 2 and 3*

The Auxiliary Classes Branch of the Department of Education has prepared magnatyped copies of the First and Second Readers and the Public School Speller, which may be obtained free of cost on application. It is hoped that in the near future, copies of other texts in large print may likewise be furnished. On the market are a number of books, printed in large type on rough dull-finished paper, suitable for supplementary reading in Forms I and II. The *Red Letter Primer*, Dent & Sons, may be used as a Primer by primary sight-saving classes. The teacher may type in large print some of the lessons used in the regular grade. Charts for primary grades may be made with a printing set.

A rough unglazed manilla or straw paper should be used for class exercises. Large sheets may be obtained and cut to the desired size 12 by 9 inches. Part of the order may be lined with lines ¾ or 1 inch apart.

Large primary pencils with soft black lead are necessary. It is desirable that the pupils do no pen work. The teacher should use a pen with a ball or flat point in preparing exercises.

A work table 10 feet by 3 feet, by 2 feet 3 inches high made of dull-finished wood is convenient for hand work.

A sand-table is necessary in sight-saving classes for teaching geography, history, nature study, and literature. The bottom is made of five-ply wood 40 inches by 30 inches. The sides and ends are of inch lumber 1½ inches deep to which the bottom is firmly screwed. The bottom should be painted a deep blue and the whole given two coats of spar varnish, and sand-papered down to a dull finish. The sand-table may be fastened to a frame 2 feet 3 inches high and fitted with casters or gliders. The front edge of the sand-table should be hinged to the front edge of the frame, and there should be a hinged board at the back capable of elevating the rear of the sand-table to an angle of thirty degrees.

Each sight-saving classroom should be supplied with outline blackboard maps on rollers of Ontario, Canada, North America, and the World. Care should be taken to select maps having broad strong outlines. The teacher may prepare maps on cream-coloured blinds that will prove very useful.

For reed work there will be required:

1 Hand drill and set of bits, Miller Falls, No. 77
1 Pliers, diagonal cutting
1 Pliers, round-nosed
1 Paint brush, flat, 1½″
1 Paint brush, flat, 1″

For training in music appreciation and for physical training, a gramophone should be supplied.

## INSTRUCTION

The regular Public School Course of Study is followed in sight-saving classes, methods of presentation being modified to suit the needs of the pupils.

All arithmetic should be studied in the sight-saving classroom. Exercises may be either put on the blackboard or prepared on the typewriter by the teacher. Periods of close written work should be short and the emphasis should be placed on mental rather than written solutions.

Senior classes can take oral work in literature in the regular grade. Written exercises, memory work, and reading should be taken in the sight-saving room.

All history lessons may be taken in grade rooms. The sight-saving teacher may supplement these lessons by reading aloud to the pupils the textbook or assigned supplementary works.

With the aid of the large type multigraph copies of the text, now supplied by the Department of Education, spelling may be taken in the regular grades by senior pupils. Grade II children may copy newly-taught words in a note-book specially made for that purpose.

Senior pupils may attend the regular grade room for all lessons in geography except map work. The sight-saving teacher should supplement these lessons by reading aloud the text or assigned supplementary literature; by teaching the spelling of difficult words met in grade lessons; by taking most of the work connected with map study, and by conducting certain reviews with the aid of the sand-table and other sight-saving devices. Much of the junior work should be taught by means of the sand-table, product maps, scrap-books, etc.

Grammar, composition, and language lessons are taken in the sight-saving room. Oral composition may be taken by senior classes with the regular grades.

Pupils may attend the regular classrooms for hygiene and music.

Except for the matter of measuring, manual training requires very little intensive eye work, and so can be taken by the boys of a sight-saving class. Carpentry is a desirable occupation for boys with any visual handicaps, except myopia. Cooking may be taken by girls in the regular household science classes; but sewing lessons, if taught at all, should be conducted by the sight-saving teacher. Care should be taken that myopes are not given activities requiring much bending.

Exercises in physical training involving much bending should be avoided. Eye difficulties frequently lead to poor posture. Corrective exercises should be given. After periods of eye-strain, games in which balls, bean bags, etc., are used benefit the children.

Seat-work, correlating with regular work, should require a minimum use of the eyes. Exercises involving the use of objective material are most desirable. The making of scrap-books, posters, and collections should be encouraged. Sand-table, plasticine, and paper construction work are useful and interesting activities.

### Suggestions

Seat-work suggestions given in Chapter VII, Book II, and Chapters II and III, Book III, can be adapted for use in sight-saving classes.

Writing by both teacher and pupils should be large, clear, and properly spaced.

Have the children make frequent use of the blackboard for written work.

Make lessons oral where possible.

Written exercises should be brief and interspersed by rest periods. Rest periods may be varied by playing short games; by singing; by playing the gramophone; by some child relating an interesting story or event; by the teacher reading aloud; or by the children moving quietly about the room.

Never allow children to read fine print at school, and encourage them not to do so at home.

Teach the children to use the typewriter and make good use of it in preparing exercises.

Vertical or manuscript writing should be used by both pupil and teacher.

The eyes of the pupils should be frequently examined by teacher, nurse, and doctor.

Teach the children to care for their eyes when not in school. It is well that the teacher should visit the homes of her pupils, in order that she may learn home conditions and secure the co-operation of parents.

### Vocational Guidance

One of the great problems for a child with defective vision is what to do for a living. It is comparatively useless for a teacher to tell a child that he must not do this or that, but there is ample opportunity by tactful means to encourage his interest along vocational lines demanding a minimum amount of eye-strain. True, there is the born poet, musician, or artist, but most children decide what they are going to do for a living by becoming interested in what some one else does.

A girl who wishes to be a bookkeeper because her chum is one may be led to take an interest in salesmanship. A boy who desires to follow his father's footsteps in accountancy may, through tactful guidance, become fascinated by the mechanisms and mysteries of wireless. Gardening, florist work, poultry farming, salesmanship, shop work under good conditions, piano tuning, acting as waiters, all offer opportunity for boys. Girls may become waitresses, nursemaids, florists, salesladies, maids, light warehouse workers, telephone operators, etc.

## CHAPTER V

# ORAL AND LIP-READING CLASSES

ORAL classes may be established in cities of 200,000 population and upward for children without hearing, speech, and language, but otherwise eligible to attend public or separate school.

Lip-reading classes are for children, otherwise eligible to attend public or separate school, whose hearing is so poor that when placed in a front seat they cannot make satisfactory progress or who may require to learn lip-reading on account of progressive forms of deafness.

Lip-reading is seeing a moving picture of words. Though the eye can never equal the ear as a receptor of speech, it may become a very good substitute. If lip-reading is learned before a state of total deafness occurs, seeing habits become so intimately linked with hearing habits that lip-reading perceptions tend to appear in consciousness as auditory sensations. The fact that early acquisition of lip-reading skills helps to keep auditory memories vital and intact is of great importance to those suffering from progressive forms of deafness, since the production of vocal sound is intimately associated with and to a large extent dependent upon the reproduction of auditory imagery. We ordinarily speak remembered speech. Hence the need of detecting cases of partial deafness, especially progressive deafness, early in life, and affording the afflicted one such a training as will enable him to control, through memories aroused by sight perception, the normal tones and inflections of his own voice.

Owing to their physical deficiency a large proportion of deaf children are decidedly backward in intellectual development. Not only do they fall behind in their studies and drag out an unhappy, semi-isolated and frequently morbid school existence, but they constitute a drawback upon the progress of the regular classes. The teacher who gives attention to the special needs of the afflicted pupil neglects the remainder of her class. The teacher who denies that special attention finds a worry to her mind, a source of disturbance to the room, and a repeater in the next year's class.

The organization of lip-reading classes for the partially deaf relieves the school of repeaters, the grade teacher of worry, and the grades of impediments to progress. By giving the afflicted child ability to listen with his eyes, these classes accelerate his school progress, re-establish his social contacts, and later permit him to continue his educational career and enter business life with but little handicap.

The establishment of oral classes in large centres enables children, without breaking home ties and sacrificing that important cultural education which comes through home and local associations, to perceive and understand what is said, to reproduce sounds which they have never heard, and never will hear, and so convey their thoughts to others, to make fair progress in the regular Public and Separate School Courses of Study and later to establish themselves in normal society with a minimum degree of disparity.

Upon application by a board the Inspector of Auxiliary Classes in conjunction with the Director, Division of Child Hygiene may survey a new school area for the purpose of establishing classes for deafened children.

It should be remembered that a survey conducted with a view to establishing classes is by no means identical with a survey made for statistical purposes. In the former many factors besides relative degrees of deafness enter into consideration—age, intelligence, school retardation, health, distance from school, etc.

A preliminary screening of the area is made either by group testing, or by a process of empiric discovery. Group and subsequent individual tests may be administered by an auxiliary teacher of the deaf, a school inspector, a school nurse, an officer of the auxiliary classes branch, or an officer of the division of child hygiene.

The group test is administered as follows:

Twenty children are seated in two semi-circular formations of 6 and 15 feet radii, respectively, in a quiet room, approximately 30 by 45 feet. The examiner is stationed at the central point, and talks with the group to eliminate tension and to familiarize them with her voice. Each pupil is supplied with a sheet of paper ruled in six vertical columns and instructed to enter the first 25 numbers read in the first column, and to close the eyes softly after each entry, so that the giving of the number by the examiner cannot be seen. The right ear of each pupil is then closed with absorbent cotton. The examiner says each number in column one in a distinct but unforced whisper, and at the finish of expiration. The pupils sitting with heads reasonably erect record the numbers, which are given but once except in case of untoward incident.

| I. | II. | III. | IV. | V. | VI. |
|---|---|---|---|---|---|
| Six feet | | | Fifteen feet | | |
| Right | Left | Both | Right | Left | Both |
| 46 | 34 | 8 | 4 | 18 | 12 |
| 7 | 53 | 56 | 31 | 45 | 8 |
| 38 | 97 | 91 | 18 | 14 | 16 |
| 6 | 19 | 70 | 16 | 27 | 18 |
| 74 | 28 | 82 | 29 | 5 | 72 |
| 82 | 45 | 68 | 27 | 61 | 41 |
| 63 | 72 | 71 | 81 | 54 | 22 |
| 55 | 81 | 54 | 93 | 81 | 75 |
| 29 | 74 | 65 | 64 | 36 | 63 |
| 87 | 5 | 36 | 45 | 47 | 84 |
| 62 | 96 | 72 | 83 | 62 | 25 |
| 70 | 84 | 5 | 52 | 38 | 93 |
| 65 | 90 | 91 | 98 | 89 | 78 |
| 19 | 39 | 86 | 87 | 3 | 26 |
| 17 | 37 | 53 | 63 | 46 | 29 |
| 84 | 63 | 17 | 29 | 92 | 84 |
| 35 | 56 | 19 | 2 | 57 | 65 |
| 42 | 45 | 47 | 54 | 49 | 73 |
| 69 | 71 | 18 | 33 | 43 | 66 |
| 98 | 9 | 84 | 56 | 69 | 94 |
| 41 | 68 | 79 | 14 | 41 | 83 |
| 34 | 85 | 35 | 19 | 97 | 13 |
| 57 | 55 | 43 | 36 | 12 | 17 |
| 89 | 91 | 99 | 71 | 25 | 2 |
| 93 | 48 | 76 | 85 | 37 | 66 |

Hearing of the right ear is tested in a similar manner, the examiner using the numbers in column two. Both ears are then tested and the numbers in column three are read. Pupils in the two semi-circles then exchange places, and the process is repeated, using columns four, five, and six.

Those who get, with few exceptions, correct responses, require no attention.

Those whose papers indicate deafness at either distance in either or both ears should be given the individual test.

The method of empiric discovery proceeds as follows:

Grade teachers and school nurses send up for individual examination children exhibiting indicative symptoms.

1. Defective speech—lessening of voice intensity—distortion of sounds—metallic and monotonous tones—queer loudness of voice when the child is excited.
2. Inattention and disobedience.
3. Omission of words in written exercises.
4. Worried expression or exhausted appearance early in the day.
5. Quiet but queer behaviour.
6. Retardation.

The following cases of children who are slightly or even very deaf may pass unnoticed unless the teacher or nurse is on the lookout.

1. Those with high intelligence, making average progress.
2. Those with normal intelligence, considered dull.
3. Young children thought of as developing slowly.

Cases discovered by this empiric preliminary screening are sent up for individual examination which is administered as follows:

The child stands in an ordinary classroom with his back to the examiner at a distance of 6 measured feet.

The examiner whispers in a distinct but unforced manner three commands, to which the child responds: (1) Turn around, (2) put your hands on your head, (3) touch the floor, (or), (1) rub your ear, (2) fold your arms, (3) hands behind.

The examiner then asks the child to repeat the following whispered numbers and phrases: (1) twenty-two, (2) wait and see, (3) four and two.

Candidates may be divided into three classes:

1. Those who respond readily to all tests.
2. Those who hesitate in responding to one of the tests.
3. Those who hesitate or fail to respond to several tests.

Candidates in groups (2) and (3) are referred to the school medical officer for diagnosis and, where advisable, for treatment. Candidates in group (3) are referred to the auxiliary classes board.

Admissions to classes for deafened children are determined by the auxiliary classes board with the approval of the Inspector of Auxiliary Classes on a consideration of:

1. A report on the results of group and individual tests for deafness.
2. A medical report.
3. Reports on the child's school history and health history as entered by the grade teacher and school nurse on Form A.C. 3.
4. Where considered advisable, the report of a mental examination administered by a recognized official and recorded on Form A.C. 3.

The following placement of eligible candidates may be made:

1. Children born deaf and those devoid of hearing but who, having once heard, are more amenable to the teaching of speech, may be placed in oral classes or recommended for admittance to the Ontario School for the Deaf. Special cases, with the approval of the Inspector of Auxiliary Classes, may be admitted to lip-reading classes.
2. The speaking deaf and the partially deaf who are retarded may be placed in lip-reading classes.
3. The partially deaf who are not retarded may be organized in special groups to be taught lip-reading twice a week, by an itinerant teacher, while carrying on in their regular grades.

Proceedings in the selection of candidates for the perpetuation and extension of classes once established in any centre are conducted by the local authorities subject to the approval of the Inspector of Auxiliary Classes, in a manner similar to that of the original organization.

Twice a year pupils in lip-reading classes should be re-tested. Those whose hearing under treatment has sufficiently improved and those who have become sufficiently skilled in the art of lip-reading should be returned on trial to the regular school, provided they may be placed in a grade not more than one grade junior to that of their own age group.

It is rarely feasible to place pupils from oral classes in regular grades partly because of retardation through their having had to develop the avenues as well as the content of learning, partly because of differences in teaching methods. It is, however, both practical and beneficial to admit from these classes senior pupils skilled in lip-reading and speech as visitors to the regular grades during literature, geography, and history periods, for the purpose of affording them varied practice and of widening their social contacts. Before the initial visit the oral teacher might with advantage give a preparatory talk on the lesson.

The maximum enrolment of an *oral class* is, ungraded, eight; twice graded, ten; more than twice graded, twelve. The maximum enrolment of a *lip-reading class* is, ungraded, fourteen; twice graded, sixteen; more than twice graded, eighteen. Where, with the approval of the Inspector of Auxiliary Classes, pupils eligible for placement in oral classes have been admitted to lip-reading classes the maximum enrolment to these classes is adjusted proportionately.

The room or rooms for oral or lip-reading classes should be in a school which is centrally located and easily accessible by car line. Bright sunny rooms are chosen and well-equipped with artificial lighting for dark days. Plenty of well directed light is required, in order that pupils may get clear and distinct perceptions of the delicate and complex movements used in making speech. Since the classes are ungraded or only partly graded, at least 200 square feet of blackboard should be provided for floor work and assignment exercises. Fingers are frequently used to assist eyes in detecting mouth movements of speech. Hence running water and a wash basin are essential.

Special equipment consists of movable desks, a number of chairs for group instruction, a piano for rhythm training, a gramophone, a movable mirror for speech instruction, a roller blackboard, a work table, and an index cupboard 26 inches high and 20 inches deep, with 12 vertical openings 3 inches wide for holding permanent drill exercises and charts made out on cardboard sheets. The teacher should have access to a typewriter and a duplicating machine for the purpose of preparing seat-work assignments. The room should be well supplied with supplementary reading, demonstration material and seat-work activities.

TIME TABLE

| Time | Primer | Grade I | Grade III | Grade V | Grade VII |
|---|---|---|---|---|---|
| 9.00- 9.10 | Religious Instru | ction and Music | with all grades. | | |
| 9.10- 9.30 | Transcription on slate | Number work on paper or slate | *Number work or lip-reading and speech work | *Lip-reading | *Lip-reading |
| 9.30- 9.40 | Writing | Writing | Writing | Writing | Writing |
| 9.40- 9.50 | *Lip-reading speech and language | Slate work | Slate work | Arithmetic on or slate | Arithmetic written |
| 9.50-10.00 | Colouring | *Number work Lip-reading and speech | Writing and learning tables | Arithmetic on or slate | Arithmetic written |
| 10.00-10.15 | Transcription | Colouring | *Number work and drill | Spelling | Study spelling or other review |
| 10.15-10.30 | Paper cutting | Transcription | Writing, Spelling | *Teaching new Arithmetic | Study spelling or other review |
| 10.30-10.45 | Stringing beads | Plasticine modelling | Reading Library | Working new problems or Library | *Teaching new Arithmetic |
| 10.45-11.00 | Recess | Recess | Recess | Recess | Recess |
| 11.00-11.10 | *Language, Speech training | Transcription or silent reading | Sand-table | Written reading | Written reading |
| 11.10-11.20 | Sand-table | *Language, Speech and L. R. | Free illustrating or learning a gem | Written reading | Written reading |
| 11.20-11.30 | Building with blocks | Block Puzzles | *Literature or Reading lesson | Memory verses or spelling | Memory verses, spelling or Library |
| 11.30-11.45 | Building with blocks | Reading—Picture books | Written Reading | *Literature Lesson | Memory verses, spelling or Library |
| 11.45-12.00 | Free drawing on slate | Printing | Written reading | Library | *Literature lesson |
| 12.00-1.30 | Noon | Noon | Noon | Noon | Noon |

| Time | Primer | Grade I | Grade III | Grade V | Grade VII |
|---|---|---|---|---|---|
| 1.30- 1.40 | *Language, Lip-reading Speech dictation | Transcription | Written language | Written geography | Written geography |
| 1.40- 1.50 | Transcription | *Language and Lip-reading | Written language | Reading—geography | Map drawing |
| 1.50- 2.00 | Picture tracing —carbon paper | Printing or picture | *Language or Geography | Map drawing | Reading |
| 2.00- 2.15 | Plasticine modelling, Picture outlining or paper cutting | Tracing, Illustrating on slate | Making models with blocks or sand-table | *Geography or Grammar | Reading |
| 2.15- 2.30 | Plasticine modelling, Picture outlining or paper cutting | Tracing, Illustrating on slate | Making models with blocks or sand-table | Free time | Geography or Grammar |
| 2.30- 2.45 | Recess. Dismiss Primary Pupils. | | Take Construction Work or dancing with grades. | | |
| 2.45- 2.52 | | | *Dictation | Reading or writing history | Reading or writing history |
| 2.52- 3.00 | | | Picture lang. | *Dictation | |
| 3.00- 3.10<br>3.10- 3.20 | | | Easy history stories or reading | History<br>History lesson used as language lesson | *Dictation |
| 3.20- 3.30 | | | | | *History lesson |
| Friday a.m. 11.20-12.00 | Same as other days. | | *Hygiene | *Drill | *Rhythm |
| 1.50- 2.45 | Same as other days. | | Composition | Composition | Composition |
| 2.45- 3.30 | | | Art | Art | Art |

Sewing, Household Arts, Manual Training taking with regular grades under same instructors.

Dancing, 15 minutes per week, to suit physical instructor.

*Represent recitation lessons.

Lip-reading is taught in lip-reading classes, and lip-reading, speech, and language in oral classes, in addition to the programme outlined in the course of studies for public and separate schools.

The work carried on in oral classes is of such a highly specialized nature as to preclude treatment within the limited space of this book. Moreover, the number of classes in the schools of the province is necessarily small, and teachers therein have taken prolonged courses of training to qualify them for their duties. Even the programmes and methods of instruction pursued in lip-reading classes can at best be but lightly touched upon.

Since lip-reading classes are either ungraded or semi-graded the time-table employed must be adapted to suit individual needs. On pages 244-5 is given a sample for an ungraded room containing five groups.

## METHODS

It would be useless to lay down hard and fast rules as to methods. Many of these are the teacher's own personal attributes. A teacher with foresight, power of application, imagination, enthusiasm, and vision that can take stock and look ahead, will create many methods and carry out proceedings suggested by circumstance, which will lead to very satisfactory developments.

Lip-reading lessons must be short at first. With young children, until a vocabulary is established and vocalization developed, lessons should be of a concrete nature—about a new cap, a toy ship, a naughty boy, or an accident. They should keep pace, but not go beyond the child's comprehension of language. It is to be noted, however, that the child may understand language which he cannot as yet articulate. For example, he can carry out commands which he cannot give. Presentation must be complete and explicit as the deafened child rarely interprets a missing link in a chain of thought. Material should be interesting to the child, suitable to his age and grade, and deal with subjects which will develop him morally, mentally and socially. Class response in lip-reading is at times to be encouraged. A quick reply without restraint is helpful in developing normal speech.

It is very essential that a hard-of-hearing child should use and depend upon his hearing as much as possible and, in the case of progressive deafness, retain it as long as he can. In order to do this the child should be, during instruction periods, within hearing distance of the instructor's voice, and if necessary parts of the lesson should be spoken into his ear. Continual use of the ear strengthens perception of sound, and improves the child's enunciation as well as his power to lip-read.

Speech on the part of the teacher must be uttered naturally and clearly, either phrase by phrase, or in short easy sentences as a whole. Light should fall on the teacher's face—shadows make lip-reading more difficult. Lip movements should not be exaggerated. Be sparing in gestures. Continual repetition of sentences in order that some unknown word can be apprehended is not wise. Change the sentence and come back, as—I saw you yesterday. I saw you one day. I saw you on Friday. I saw you yesterday.

Just at this moment a few time phrases might be practised, as yesterday, to-day, now, to-morrow, one day, a few days ago, etc.

Start each sentence with lips together.

Stand or sit on a level with the pupils and near to them

See all pupils at the same time.

Make sufficient encouraging remarks.

Be bright and cheerful.

Increase the length of the sentence gradually, and thus increase the span of attention.

Continue the habit of speaking at normal speed, and do not emphasize positions normally invisible.

Enthusiasm carries out in one's voice. If the teacher does not inhibit emotions and natural freedom of speech, she will find that even a deaf child can be awakened to imitate and led on to self expression.

Correct use of the voice means a great deal to the child and to the teacher herself.

A teacher must be experienced in all speech impairment.

Many of the ideas contained in Chapter VII, Book II on Seat-Work and Drill Exercises can be adapted by the teacher of lip-reading classes to her special requirements. The following suggestions are added:

1. Cards on which cut-out pictures have been pasted are distributed among the members of the group, the teacher

retaining duplicate copies. The teacher whispers a word, or with more advanced pupils a phrase or sentence. The pupil holding the corresponding picture hands his card to the teacher.

2. Pupils of a group stand in line repeating in turn words, phrases or sentences whispered by the teacher. In case of failure the next in line to answer correctly moves up.

3. The members of a group stand in a circle. Each is given the name of a flower, a vegetable, an article of furniture, etc. When two names are mentioned by the teacher the two corresponding pupils change places.

4. Cards on which have been written or printed words, phrases, or sentences may be used in place of pictures in number (1).

5. Write five to ten sentences on the board. One of the group is chosen as Mr. Pointer. As the teacher repeats a sentence Mr. Pointer indicates it on the blackboard. Should he fail the first in the group to correct the mistake becomes Mr. Pointer.

6. A lip-reading match may be conducted in a manner similar to that of the old-fashioned spelling match.

7. Sentences may be written on cardboard tags cut in two and the parts containing the latter halves of the sentences distributed among the group, the teacher retaining the other halves. As the teacher reads the first half of a sentence the pupil holding the card containing the completion hands it to the teacher.

8. Drill on a number of nursery rhymes.

9. Take imaginary trips to the woods, the park, etc. The teacher naming objects seen and the class lip-reading.

10. Pupils may practise lip-reading with one another.

11. The teacher describes some object, animal, or person in short sentences, the pupils name the thing described.

12. Easy conundrums.

13. Charts for group teaching may be constructed on heavy manilla paper 18″ x 24″, to be stored in the chart cupboard when not in use:

(1) Speech charts showing the positions of the various organs of speech during initial and final stages of vocalization.

(2) Picture charts for primary pupils showing foods, clothing, flowers, etc.
(3) Picture charts for story development.
(4) Number charts—tables, extensions, measures, etc.
(5) Geography charts.
(6) Grammar charts—conjugations of the verbs "to be" and "to have" as well as a regular verb.

14. Many interesting lip-reading devices may be introduced during review lessons in academic subjects.

(1) Sentence completion cards in history and geography.
"Tea grows" . . . . . "in India, China, and Japan."
"The oldest city in Canada" . . . . "was founded by Champlain."
(2) Question and answer cards.
"What is the highest mountain in the world?" . . . "Mount Everest."
(3) Pupils locate on a wall map names of places given by the teacher.
(4) Descriptive conundrums told by the teacher.
"I was an Englishman. In 1610 I sailed into the harbour of New York. I discovered a river there. I went back to London. The following year I sailed to Iceland, thence past Greenland and entered a strait. I discovered the largest bay in the world.
"Who was I?"
(5) Descriptive conundrums made up and told by one pupil to the group.

Very young children who are quite deaf usually have speech defects or know only a few words. Hence lip-reading and oral work must go hand in hand. The rational way of teaching a deaf child to read is to begin with the mouth and teach him to speak correctly. Present to the imitative aptitude of the child the simple elementary sounds of the language and have him practically master these. In this way distinct and graceful habits of speech will be formed.

He, like the hearing child, must pass through various preparatory stages. He will form the watching habit, as the result of interest and satisfaction. He will ignore some words and accept others. Like the hearing child, he will be interested in the top, but not the doll. It is very important that the child lip-reads through interest, even though that interest may cause an interruption in a seemingly fine lesson plan.

In the initial lesson choose three toy objects, such as a ball, a cow, a flower. Holding the object in your hand, call attention to your lips as its name is said. Pupils will soon see that each word is formed differently.

As they learn to lip-read these names add others. When a sufficient number has been learned, the objects may be given to the pupils and handed to the teacher as named by her. Pupils may do this as a game among themselves. Pictures on cards may also be used.

Simple commands may next be taken—stand up, run, jump, hop, clap your hands, etc. Start with two or three and add one or two each lesson.

Show the pupils the shape of the lips in making the consonant, "wh." (Let them blow a feather or blow out a candle.) Have them produce the breath sound. Show how the lips are closed in making "p." The children will readily see the difference between "wh" and "p." Follow by teaching "f"—upper teeth on lower lip. Continue with t, s, k (c), th, sh, ch, h, r, l, th, etc. Followed by the long vowels and diphthongs, ā, ē, ī, ō, ū, ow, oo, aw, ar, ir (er) (ur), ä as in "ah," oi (oy) as in "oil."

It has been found advisable to use the written forms a-e, i-e, ee, u-e, o-e, with young children. They become familiar with them as they are used.

As the above vowels are being taught, use them with initial and final breath consonants in syllable drills to give familiarity with movements, as in the following exercises:

The reason for starting with "ä-ah" is the position, for "a" is mouth wide open and the other vowel formations are either forward or backward from it.

| | | | | |
|---|---|---|---|---|
| 1. | fä | pä | tä | sä |
| | foo | poo | too | soo |
| | faw | paw | taw | saw |
| | fow | pow | tow | sow |
| | fum | pum | tum | sum |

Practise with other initial consonants.

2.

| | | | |
|---|---|---|---|
| fä | pä | tä | sä |
| fa-e | pa-e | ta-e | sa-e |
| fee | pee | tee | see |
| fi-e | pi-e | ti-e | si-e |
| fo-e | po-e | to-e | so-e |

Practise with other initial consonants:

3. Drill leading up to “oi”.

| | | | | |
|---|---|---|---|---|
| ä | fä | pä | tä | sä |
| aw | faw | paw | taw | saw |
| ee | fee | pee | tee | see |
| oi | foi | poi | toi | soi |

Practise with other initial consonants.

Note: “oi” is formed from the combination of aw-ee said rapidly and has two movements.

4.

| | | | |
|---|---|---|---|
| fä | pä | tä | sä |
| faw | paw | taw | saw |
| fi-e | pi-e | ti-e | si-e |
| fee | pee | tee | see |
| fu-e | pu-e | tu-e | su-e |

Practise with the other initial consonants.

5. Final breath consonants:

| | | | | | |
|---|---|---|---|---|---|
| ap | oof | oos | ooth | oo as in smooth. | |
| oop | eef | ees | eeth | | 1 |
| eep | afe | ace | aith | ai-a-e | th—no voice as in thin |
| ape | ofe | ose | oath | oa-o-e | 2 |
| ope | ife | ice | earth | ear-er | th—voice as in them |
| ipe | urf | irs | arth | | |
| irp | arf | | outh | | |
| urp | | | | | |
| erp | | | | etc. | |

From above syllables words may be formed.

| | | | |
|---|---|---|---|
| soop | roof | goose | |
| deep | beef | geese | |
| shape | cafe | race | ce-s |
| rope | lofe | dose | |
| ripe | nife | rice | |
| chirp | turf | first | etc. |

In this way words as a whole are being correctly said. Some may not be fully understood. Neither are all words said by hearing children comprehended in full. But the child's enunciation and lip-reading is being developed.

In lip-reading short vowels, select pictures, or objects whose names are expressed with short vowels, as: hat, pin, top, apple, cup, pen, banana, cherry, man, orange, dog, cat, etc. "Show me an apple, a top," etc. Short vowels are difficult to lip-read and should only be used with consonants.

Lip-reading sentence exercises:

I see a cup.
I see a man.
I see a dog.
I see a cat.
I see a pin.
I like apples.
I like bananas.
I like oranges.

I have a . . .
I have a . . .
I have a . . .
I have a . . .
I have a . . .
I ate an . . .
I shall eat . . .

May I have an apple?
May I have a pin?
Where are the apples?

May I see you?
May I see the dog? etc.

Another exercise for speech and lip-reading:

| *at* | *et* | *ot* | *ap* | *ut* | *up* | *ip* | *op* |
|---|---|---|---|---|---|---|---|
| mat | met | pot | map | cut | cup | sip | sop |
| pat | pet | lot | rap | nut | sup | lip | hop |
| bat | let | dot | tap | rut | pup | dip | cop |
| fat | net | not | lap | hut | | hip | pop |
| sat | get | got | sap | but | | rip | top |
| rat | wet | hot | cap | | | whip | lop |
| cat | set | | | | | pip | etc. |
| hat | | | | | | | |

Note—The words in brackets are homophenous.

When teaching the voice consonants, it is best that they be used in drill first and later in sentences.

Bat, bad, ban, and mat, mad, man are all the same on the lips. These words are homophenous.

Drill separately in columns and then in simple sentences.

| ad | an | in | id | ed | en |
|---|---|---|---|---|---|
| bad | man | tin | lid | bed | ben |
| mad |  | din | did |  | men |
|  |  | pin | pit |  | pen |
| fad | fan |  |  |  |  |
|  |  | sin | sid | fed | fen |
| sad | can |  | rid | let |  |
| lad | dan |  | bid | led |  |
| dad |  | thin | kid | ted |  |
| cad | ran |  |  | hed | hen |
|  |  | fin | fit |  |  |
| had | van |  |  |  | den |
|  |  |  |  |  | ten |
|  | than |  |  |  |  |

A teacher of lip-reading must be always alert as to more difficult homophenous words such as "begin" and "meet." With most speakers "gi" is so concealed that it cannot be noticed.

Type sentences:

I saw a man.
Have you a fan.
Dan is a boy.
I love Dan.
I see a van.
We can see.
The boy is sad.

Did you see.
I have a pin.
I shall pet the cat.
The paper is thin.
Put the lid on the tin.
(Lid and tin are homophenous.)

The bright child will readily point out homophenous words, but a quick grasp of the sentence as a whole is the essence of good lip-reading. The following development exercises are suggested at this stage:

1. Have a child hide something from among a basket full of toys. The teacher asks. Have you a ball? Have you a top? Have you a cow? Pupils may play this game among themselves.

2. As soon as they can read, use simple sentences on slips.

3. Lip-read—parts of the body (as show me your thumb); parts of clothing; furniture in the room; names of pupils; things out-of-doors; flowers; animals; fruits; vegetables; birds;

people at home; colloquial forms—Good-morning, Good-bye, Thank you, No thank you, Pardon me, etc.

4. Partitives,

a piece of pie.
a cup of—
a bag of—
a loaf of—
a can of—
a pair of—
a tube of—
a plate of—
a dish of—
a basket of—etc.

5. Time phrases—

To-day
to-morrow
yesterday
some day
in a few days
in a few hours
in a few months
in a few years, etc.

6. Rhymes—Baa Baa Black Sheep.

7. Numbers—Show me two sheep—a chart or objects may be used. Show me five apples.

8. Colours—Use chart on which colours are painted or pasted. Point out objects in room similarly coloured—Show me blue. Show me a blue ball. What colour is the wall? Who has a yellow dress?

9. Commands—Child performs the action—Dance. Bounce a ball. Spin a top. Open the door. Clap your hands. Sit down. Stand up. Hop, etc.

10. Descriptive Guess—A pupil hides an object. Others ask in a low voice. Is it black? Is it old? Has it blue eyes?

11. Picture Game—Where is the cat? Is the cat fat? What colour is it? Is its tail long or short? What does a cat eat? I saw a black cat in the street. It had a mouse in its mouth.

12. Select a picture—Have the pupils write sentences about it. Use these sentences as a lip-reading drill.

13. Description of a party—Last night I was at a party. Fifteen people were there. The house was very pretty. There were yellow flowers on the table. We played games and had a jolly time.

A Trip—Last summer I went for a long motor ride. I saw a beautiful river, some large cities, and a very high mountain.

A Meal—Do you like pie? Do you like soup? I like fish and potatoes. I had beef, potatoes, carrots, and pie at noon. Oh! Yes, I had corn soup, too.

*Primary Drill Story*

I see a doll.
Have you a doll?
Have you a large doll?
Anna's father gave her a doll.
Anna's father gave her a large doll.
Show me your eye.
Who has blue eyes.
Anna's doll has blue eyes.
What colour is . . . 's hair?
Anna's doll has brown hair.
Anna's doll has brown curly hair.
What colour is my dress?
What is my dress made of?
Anna's mother gave her some cloth.
She gave her some blue cloth.
Anna sat on her chair.
She made a dress.
She made a dress for her doll.
She sat on her little chair and made a dress for her doll.

Whisper the story sentence by sentence and have all pupils respond. Let pupils tell the story as a whole.

Finally read the story aloud, as:

Anna's father gave her a large doll. It had blue eyes and curly hair. Her mother gave her some brown cloth. She sat in her little chair and made a dress for her doll.

### SYLLABLE DRILLS LEADING UP TO A SENTENCE

I mā.
We mā
Thā mā.
Thā mā sē.
Thā mā sē a mous.
We may see a mouse.
She may see a mouse.
I saw a mouse.
I saw a mouse in the house.

### GUESS THE NAME

I am small. I am black and white. I have four paws.
I can see in the dark. I like to catch mice and rats.
What am I?

### Questions on a Rhyme

Where did old Mother Hubbard go?
What did she want?
Why did she want a bone?
What did she find?
What did the dog get?
How did he feel?

When, as frequently happens owing to progressive deafness, late discovery, or the recent installation of a class, the beginning pupil is of intermediate or senior school age, more expeditious methods of procedure are adopted.

Begin by explaining through the media of speech and writing that in lip-reading we have *position*, as when making a single sound; *movement*, as when two or three sounds are combined to make a dipththong, syllable, or word, as *oi*, *foo*, *remain*. In *flower*, for example, the lower jaw and lips move, and the tongue slides from one position to another in the mouth.

In forming ā and ē the lips move backward, in ō and oo forward. Show position for *ah*, and contrast ā and ē. Show that *e* position on the lips is a little more backward than *a*, and *oo*, a little more forward than *o*. Drill the sequence *ah-a-e-o-oo* as *ä-ā; ä-ē; ä-ō; ä-oo* (*ah*=*ä*).

Teach the consonants *f*, *v; s*, *z; m*, *b*, *p*. Drill *f*, *s*, *and p*, in combination with the vowels taught, as *fä-fa-fe-fo-foo*, etc. When *v*, *z*, *m*, and *b*, are introduced in conjunction with the above vowel sounds, the pupils should be told the initial letter.

Teach *th*, *sh*, *w*, and drill:

| | | |
|---|---|---|
| wē | mā | sā |
| shō | mē | |
| wē | mā | shō |
| thā | mā | sē |
| wē | mā | pā |
| thā | mā | pā |

If *p* is said for *m* accept it, except when giving sentences.

Follow by syllable drills:

wē mā
wē mā sē
wē mā sē the farm
wē mā sē the wā
wē mā sē the wā to the farm.
shō mē
shō mē the wā
shō mē the wā to the barn.
She mā shō mē the wā.
She may show me the way to the barn. etc.

and then by sentence drills:

You may see.
She may see.
May we see?
May they see?
Show me the sea.
Show me the fee.
Show me the way.

May I see the show.
May I sew?
You may sew.
May I buy some soap?
She may pay.
She may move.
We may move.
We may move away. etc.

Teach—*er* (*ir*, *ur*). In *ir* the lips move forward, the lower lip usually a little farther than the upper. Contrast *ir*(*er or ur*) with the vowels taken. Pronounce in the same breath at a natural even rate:

foo–foo–foo–fir
moo–moo–moo–mir
soo–soo–soo–sir

fā–fā–fā–fir
mā–mā–mā–mir
sā–sā–sā–sir

fī–fī–fī–fir
mī–mī–mī–mir
sī–sī–sī–sir

Follow by syllable drills:

She mā
She mā sē
She mā sē mē
She mā sē her

She may see her to-day.
She may see her soon.
They may see her on Saturdays.

Note:—Having had a drill on the names of the days of the week, months, etc., previously, it makes it easier to slip them in sentences.

### Syllable Drill Leading up to Sentences

I mā bī
I mā bī a fir.
I mā bī a fir soon.
Shall I buy the fur?
May I buy the fur?
Shall I buy a fur coat?
I may buy a fur coat.
Mother may buy a fur coat.

The fir
The bir (mir, pir).
We were
They were the fir
They were the first to see.
They were the first to come.
She may be the first to go.
May I be the first?
May I see first?
Were you the first in your class?
. . . . was first in her class.

Sentence Drill:

Mother was very firm with me.
My sister has a new fur.
We dashed quickly around the curve.
Thank you, sir, I shall go.
Many fir trees grow in the woods.
A serf is a slave.
The surf breaks up on the shore.

Exercise Story:

What is your name?
Is your name Elizabeth?
Have you seen a princess?
I shall tell you about a princess.
I shall tell you about Princess Elizabeth.
Princess Elizabeth lives in England.
She went with her father.
She went with her father and mother.
She went with her father and mother to Scotland.
Have you a grandmother?
Have you a grandfather?
Do you visit your grandfather?
Princess Elizabeth went to visit her grandfather.
She went to visit her grandfather and grandmother in Scotland.
One morning.
The first morning.
On the first morning.
They got there.
They arrived there.

They saw Daisy.
They saw Daisy for the first time.
Daisy was a pony.
She pulled a cart.
She pulled a cart which carried the letters.
She pulled a cart which carried the mail.
She pulled a cart which carried the mail to Elizabeth's grandfather's home.
The Princess loved Daisy.
She was fond of Daisy.
She became very fond of Daisy.
She stood on the stone steps.
She had carrots for Daisy.
She had her skirt full of carrots.
She gave them to Daisy.
She would give them to Daisy.
Daisy ate them.
Princess Elizabeth put her arms around Daisy's neck.
Princess Elizabeth put her arms around Daisy's neck while she ate the carrots.
They were friends.
They were great friends.
They became great friends.
Little Elizabeth went south.
When Elizabeth had gone south.
Daisy would dance.
Daisy would prance.
Daisy would prance on the doorstep.
Daisy would prance with impatient feet.
Daisy would look for Princess Elizabeth.
She would look in vain for Princess Elizabeth.
She would look in vain for a little child.
She wanted love.
She wanted love words.
She wanted love words and carrots.
She looked in vain for a little child.
She looked in vain for a little child with love words and carrots.

*The Story:*

### THE LITTLE PRINCESS AND DAISY

Once Princess Elizabeth went with her father and mother to visit her grandmother and grandfather in Scotland.

On the first morning after they arrived the little Princess saw Daisy for the first time. Daisy was the pony that pulled the cart which carried the mail to her grandfather's home.

The Princess became very fond of Daisy, and each day she would stand on the stone steps with her skirt full of carrots for her. She would give them to Daisy, and then put her arms around Daisy's neck while she ate them. They became great friends.

When little Elizabeth had gone south again, Daisy would prance with impatient feet on the doorstep looking in vain for a little child with love words and carrots.

## CHAPTER VI

# SPEECH-CORRECTION CLASSES

PHYSICAL and mental defects usually call forth our pity and challenge us to find a remedy for them, but the unfortunate child or adult who is afflicted with a speech defect seldom receives sympathy, but rather is laughed at and mimicked. This is torture to a sensitive child and is often the cause of self-repression; sometimes it gives rise to behaviour problems.

Statistics have shown that defective speech is one of the causes of retardation in school life and of economic loss in the business and social world of adult life. It is only of late years, however, that any intensive study has been given to methods of alleviation of speech defects in school children. It is now generally conceded that the establishment of speech-correction classes under properly trained teachers is a valuable contribution to the cause of child welfare and a justifiable expenditure of public money.

### ORGANIZATION OF SPEECH-CORRECTION CLASSES

Following appointment of one or more duly qualified auxiliary class teachers of speech correction, the Board of Education on advisement by the inspector decides where the classes shall be conducted. Each teacher may be assigned to a permanent centre, or she may be scheduled to go from school to school as a visiting teacher.

If arrangements are made for visiting work, it will be found advisable to select five schools as centres for each teacher, with a schedule which provides for two visits a week to each school centre. The following is a suggested itineracy:

| | *Mornings* | *Afternoons* |
|---|---|---|
| Monday | A School | B School |
| Tuesday | C " | D " |
| Wednesday | B " | E " |
| Thursday | D " | C " |
| Friday | E " | A " |

In this way pupils will not be compelled to absent themselves from the same class periods twice in one week, nor will they have speech-correction lessons on consecutive days.

Principals of the various schools are notified as to centres selected, whereupon they obtain from grade teachers and nurses the names of pupils suffering from speech defects, and arrange for the pupils to be examined at the most accessible centre. The speech-correction teacher examines these pupils individually, making a record of each case, and sends a notice to the principals as to the days and hours of attendance.

In the enrolment of speech-correction classes, preference should be given to those candidates who may profit most by instruction. Mentally-defective children, surgically-remedial cases, and pupils who lack training in word and syllable recognition should not be entered until all others have been accommodated. If the speech-correction teacher finds or suspects that a pupil has a mental or physical defect which might cause or aggravate the speech trouble, she reports to the principal, with a request for a mental or physical examination as the case may require. The findings of such examination may determine the advisability of admitting the pupil to speech-correction classes.

Approximately one hundred and twenty-five pupils may be allotted to each speech-correction teacher. The pupils may be taken in groups of from seven to ten. Each group should be given two lessons per week, one morning lesson of fifty-five minutes and one afternoon lesson of forty-five minutes, at least one day intervening between the two lessons. Individual instruction, where necessary, may be given in ten-minute periods. As speech is a social adjustment problem, however, group instruction for at least part of the course is desirable in all cases.

No rule can be laid down as to how long pupils should remain in speech-correction classes. The usual period of instruction is one year. They should not, however, leave the classes until adjudged and recorded by the speech-correction teacher and the principal as corrected or sufficiently improved to carry on regular grade work successfully and without detriment to class associates.

## Classification of Speech Defects

Some form of record card should be kept by the speech correction teacher. The following form is suggested as satisfactory for use on a card 8″x 5″:

### SPEECH CORRECTION; LIP READING

Name *Burnham, John* School *Kent*

Address *968 Bloor St. W.* Parent or Guardian *George R.* Phone *LO. 6174*

Date *Sept. 10, 1929* Age *11yrs.* Grade *Sr. III* Teacher *Miss Daly* Room *20*

Nationality *Canadian* Siblings *3 sisters, older* I.Q.

Referred by *Teacher*

Remarks *of Teacher "Can't begin, especially in reading."*

Description of Defect *Stammering.*

*Tries to speak on inhalation of breath. Speech is rapid. Difficulty in beginning to speak or read and with words beginning with "th" and "b". Began in First Book. Lately worse. No cause given. Does not read in class. Frowns. Body movements—legs.*

### HISTORY

Physical *Birth and feeding normal. Bronchial. Delicate. Does not eat vegetables.*

Social *Bed 9.30. Reads exciting stories.*

Family *Father stammered. Good home atmosphere. Parents co-operative.*

Speech *Normal until 7 yrs.*

### PROGRESS

*Jan. 1931—Good progress. Does not stammer in reading, but occasional difficulty in class answers.*

*June, 1931—Has had no recurrence of trouble during past two months.*

Date of Admission to Class *Sept., 1930* Name of Special Teacher *Jane Smith*

Date of Discharge *June, 1931* Reason for *Apparently corrected*

Remarks (Principal, Grade Teacher or Parent) *"Reads without stammering."*

Speech defects are usually classified under one or more of the following heads:

1. Letter substitution.
2. Lisping (lingual protrusion or lateral emission).
3. Nasality or lack of resonance.
4. Foreign accent.
5. Slovenly speech.
6. Stammering; stuttering.

The data to be recorded under the heading of "Description of Defect" may be gleaned from conversation with the pupil and from his reading and his answers to questions.

In a case of "letter substitution," in addition to general phrases descriptive of the defect, the elements substituted for the correct elements should be set out in detail. The substituted elements may be ascertained by using the test given under "Correction of Letter Substitutions" (see p. 265). Substitutions so recorded should be checked later as corrections are made.

In a case of "stammering," careful notes should be made as to tics, letters with which there is difficulty, form of attack, and any peculiarities of rate of speech, pitch, inflection, and breathing. In addition to these, the record should show when the trouble first became apparent, its probable cause, and when and under what circumstances it occurs and recurs.

## LETTER SUBSTITUTION

### *Method of Recording*

Have prepared sheets on which are printed or pasted pictures of familiar objects. The pictures are arranged usually in groups of three across the page, so that each consonant may be tested initially, medially and finally. The names of the objects do not appear on the sheets. Example, for testing the sound of "m", a picture of (1) a man, (2) a hammer, (3) a comb.

Record only the fault in the sound which is being tested. Use dashes to indicate initial, medial, and final positions, thus, t— for k—, —t— for —k—, —t for —k. Proceed in this manner until there is a definite record of all the defective elements and combinations of elements. Printed record sheets may be used, of course, showing all the elements and combinations of elements in their various positions; such cards require merely to be checked when the test reveals a defect.

Place the child so that the light falls on his face during the test. Do not trust to the ear alone, but rather watch *how* he forms the sounds. In addition to giving definite tests of the elements, induce the child to talk freely, and then write down general comments on his speech, personal appearance, posture, etc.

### Common Letter Substitutions

1. t for k
2. d “ g
3. f “ th (breath)
4. s “ th (breath)
5. s “ z (foreign)
6. z “ th (voice)
7. w “ r
8. l “ r (Chinese)
9. w for y
10. f “ s
11. sh “ s
12. lh “ s (cluttered speech)
13. th “ s (lisping)
14. n “ ng (foreign)
15. ngg “ ng (foreign)
16. ngk “ ng (foreign)
17. ng for l
18. w “ l
19. y “ l
20. s “ sh
21. v “ w
22. w “ wh
23. sh “ ch

### Common Defects in Consonant Combinations

1. Omission of one of the elements, as "pay" for "pray," "pool" for "spool."

2. Substitution of a wrong element, as "pway" for "pray."

3. A glide between the elements, as "puray" for "pray."

4. Lack of precision in production, as in an attempt to say "pray" without proper closure of the lips for "p".

5. One element over-stressed, especially in "s" combinations, as a prolonged "s" in "spend." This results in breathy speech.

### *Method of Correction*

1. Give exercises for producing strength and flexibility of lips, tongue, and jaw (see pp. 273-274).

2. Give syllable drills for strengthening the auditory, tactile, and visual impression of the sound which the child substitutes for the desired sound. Use a mirror for syllable drills.

3. Repeat a long-vowel syllable with the desired consonant in it several times; contrast it with the substituted consonant. If the child does not give it correctly after hearing it several times, *show* him *how* it is produced and explain the difference; or, he may be given a tactile impression by placing his finger

on the lips or tongue of the teacher. If the child is then unable to produce the correct sound after several attempts, it may be found necessary to manipulate the organ in order to get a correct kinaesthetic impression and a correct response.

Example: failure to produce "g" in "gu" or "go". Hold down the front of the tongue with a tongue depressor or fingers, and thus force up the back of the tongue. This is seldom necessary if sufficient time has been devoted to preliminary drills.

4. Use the syllables in words as soon as they have been correctly produced, and then use the words in sentences.

As the child's difficulty arises from habitually incorrect responses to stimuli, it is advisable to use meaningless syllables or new words at first, rather than familiar words in which the motor response has been wrong habitually.

It should be borne in mind always that, in consonant combinations, the articulating organs do not assume a position of rest after the initial element, but take the position of the second element immediately; otherwise, the glide between the elements would be audible.

## LISPING

Lisping is an imperfect production of the sibilant sounds s, z, sh, zh. It is generally an imperfect production of "th" for "s."

### *Causes*

1. Carelessness during dentition. (The teeth are not operative in speech, and lisping should not be excused during dentition as it becomes a habit very easily.)
2. Imitation.
3. Abnormal tonsils.
4. Paralysis of the tongue.
5. Lingual inactivity.
6. Fallen palate.
7. Thumb-sucking.

### *Correction*

1. Tongue exercises—especially those to widen the tongue and groove it.
2. Speech exercises for d, t, n, tr, dr. These exercises strengthen the lingual muscles.

3. Speech exercises for "th" breath and for "th" voice.
4. Buzzing like a bee with teeth nearly shut and lips drawn back in a smile.
5. Speech exercises for words ending in the "z" sound and words beginning with the "z" sound.
6. Words and sentences to contrast the "th" voice sound with "z" sound.
7. Speech exercises for "s" sound final and for "s" initial.
8. Words and sentences to contrast "th" breath with "s" sound.

The best results are obtained at first by giving the "lower" position for "s" and "z"; that is, the tip of the tongue against the back of the lower teeth with teeth nearly shut. If the child does not produce the sound correctly from imitation or description, insert a tooth-pick or narrow manipulator between the teeth and hold the top of the tongue down. Experience has shown, also, that "s" in certain combinations of consonants, such as "sm" and "sp", is easier for the lisper at first, than to give "s" directly before a vowel, except it be "e" long and "i" short, which have nearly the same tongue position as "s".

The child may be able to get the correct production of "s" fairly quickly, but, if the habit of lisping has been of long standing, it will take a long period of conscientious effort to make the new production hold in general speech. The specific drills in words, sentences, rhymes, and verses need to be interspersed, therefore, with short conversations or the reading of a paragraph in which the sibilants recur, to insure that the child will concentrate on the correction of the habit.

## NASALITY

English vowel sounds are emitted through the mouth and are not nasal, the resonating chambers of the head serving merely to reinforce the vowel sound. Certain French vowels are nasal. To make the child aware of the proper production of the English vowels, he may hold the nostrils closed and produce any series of vowels. If there is vibration felt in the fingers there is a nasal quality. In this way he will be able to test, by tactile impression, the result of his efforts toward improvement.

The habit of nasally produced speech depraves the ear. It will take a long time, in some cases, before the ear alone can be trusted as a guide.

### *Causes of Nasality*

1. Abnormal tonsils.
2. Fallen soft palate.
3. Obstruction of the nasal passages.
4. Cleft palate.
5. Imitation.

### *Corrective Exercises*

1. Raising and lowering the soft palate. Singing "ah" on a high note will raise the velum. Use a mirror.
2. Breathing out through the mouth in puffs or steadily.
3. Humming on "m", "n" or "ng", to develop consciousness of a nasal quality. The person who is nasal fails to give the necessary nasal quality to these sounds. To register the nasal quality through the tactile as well as through the auditory impression, place the finger tips on the nose or on the lips to feel the vibration.
4. Practise "m" prolonged before the vowels, as m—ah, m—oh, m—oo.
5. Use vocal exercises for forward production of voice.

In the case of a cleft palate, it may be necessary to teach the articulation of every lingual consonant and, perhaps, a modification of the articulation of some of them; for example, "k", "g", "ng" may need to be articulated further forward than is usual.

Varied practice in directing the breath through the mouth may be devised by the teacher, such as blowing bubbles; blowing a feather across the table; whistling; spitting; blowing cold; blowing hot; panting; etc.

For cleft palate cases, many and varied devices need to be tried, for in every such case the training is necessarily long and monotonous, both for the teacher and for the pupil. But perseverance will be rewarded by decided improvement if the pupil is of normal intelligence.

### FOREIGN ACCENT

In considering foreign accent, as related to the speech correction class, a discussion of the differences in methods of thinking, the order of words, and the idioms of the various languages cannot be taken up. But we need to bear in mind these differences in order to understand the pupil's difficulties in mastering our language, for the conflict in thought expression may give rise to an emotional disturbance which may eventuate in stammering.

Aside from this, the speech-correction teacher may smooth the path to the acquisition of the new language by:

1. Short, frequent drills on English vowel sounds. Give first the long vowels and diphthongs, and then the short vowels for ear training. The slight differences between the vowels of the pupil's native tongue and the vowels in the new language may make no impression on his ear until he is trained to distinguish the differences. The Greeks, Spaniards, and Italians mould the vowels nearer to the front of the mouth than the English do. The French and Russians have a tendency to nasal resonance.

2. Give drill on the English consonant elements which are wanting in the pupil's own language. Contrast each with the element which he substitutes. The consonant sounds which are peculiar to English and which do not occur in many of the foreign languages are "wh", "w", "th" (breath), "th" (voice), "z", "ch", "j", and "zh".

3. Give syllable drills for single consonants and consonant combinations, using them initially and finally. Also use them medially in words and in sentences. The foreigner may be familiar with an element in certain vowel and consonant combinations in his own language, but not as it occurs in English.

4. Give phrases and short sentences for ear training. The pupil repeats these until he produces them automatically. These sentences and phrases, at first, should be those that he uses in his daily speech.

### HESITATION, STUTTERING AND STAMMERING

Emotional disturbances of speech may manifest themselves merely in a slight hesitation before certain words or before words beginning with certain letters. This is an incipient stage of speech trouble which, as consciousness of it increases, may develop into stuttering or stammering. Repetition of the first letter, as "p-p-paper," is generally known as stuttering; inability to produce the sound (not merely a slight hesitation before producing it) arising from a muscle-bound condition inhibiting speech release, is generally known as stammering. The latter is the most advanced form of fear of speech situations and is often accompanied by peculiar bodily movements, spasmodic breathing or even by actual contortions. Such movements are called "tics."

The speech-correction teacher should be able to direct parents and others who deal with children during the speech-acquisition and speech-setting periods in such a way that no stumbling-blocks will be ignorantly placed in the path of the little ones during the development of the speech faculty. It has been said very wisely that the time to correct stammering is before it begins.

When the trouble is in an incipient stage the teacher should be careful not to make the child conscious of the existence of the trouble, but rather to treat it as a problem of obtaining in the mind, body, and emotions of the child a soil suitable for the production of the finest possible forms of speech. In the case of young children this may be accomplished by the parent or junior grade teacher who appreciates the difficulty and has the wisdom to deal with it during the speech-development period.

#### *Correction of Stammering*

If stammering begins after the speech-forming period and continues for any length of time, it becomes a deep-rooted habit. To overcome it an entire re-adjustment of emotional attitudes toward speech and re-education in speech production are necessary. The speech-correction teacher cannot correct stammering, she can merely help the stammerer to correct himself by re-adjusting himself to the demands of speech. The time necessary for correction may vary from a few weeks to several years; it depends largely upon the attitude of the pupil toward the contributing causes and toward the instruction given.

It should be borne in mind always that the act of stammering is in itself both a cause and an effect.

The experienced teacher makes a study of each individual case, noting carefully the manifestations of the trouble, contributing causes, social background, and inhibitions. Some of the contributing causes are physical obstructions of speech, nervous habits, nutritional defects, lack of proper rest, unfavourable home conditions, and association with other stammerers. In so far as possible such contributing causes should be removed or corrected.

The stammerer regards his defect as a fearsome, indefinable something which prevents him from speech. To offset this, the teacher should point out definite faults to be overcome and new habits to be substituted—instead of jerky movements, grace and poise in all his activities; instead of a weak voice, strong and steady vowel tones; instead of slouching, good posture; instead of tense muscles, relaxed muscles, and so on.

At first the teacher should not be critical as to expression in reading nor as to faulty forms of English in speech. Emphasize rather that the first thing to be attained is the ability to talk and read smoothly and in phrases. We think in phrases and speak in phrases. There is a sense pause after each phrase in normal speech which cannot be easily timed, but of which we are sensible. The stammerer will be found to break the natural rhythm of speech by breaking the phrase. He needs training in speaking in phrases and in seeing the phrase as a whole in reading.

The stammerer has difficulty generally in answering questions. He should be given training in answering easy questions promptly and, where possible, to begin his answer with a phrase from the question. Long answers make for composure.

The stammerer may be encouraged to read aloud matter with which he is thoroughly familiar, and also to recite rhymes which require no mental effort. He may accompany these recitations by gesture or pantomime or illustrate by drawing as he talks. This practice tends to eliminate nervous movements. In the same way he may describe objects, pictures or events. Games of pretence, also, help him to forget his speech trouble by removing it from the fore of his mind, for example, telephoning, megaphoning, selling papers, announcing trains, etc.

Relaxation exercises, vowel drills, and consonant exercises, such as those given for speech improvement, will be found helpful, especially the exercises on those consonants with which the stammerer has difficulty.

The foregoing comments are not intended to be taken as a "method" of correcting stammering. There are a score or more of recognized methods and an adequate exposition of any one of them would require much more space than is here available. The problem is largely a psychological one, and any teacher of speech correction should endeavour to familiarize herself with the opinions of the leading authorities as to the causes of stammering and its treatment. A list of reference books is appended. It is hoped, however, that the suggestions here given may help teachers in building up a speech structure which will not collapse when subjected to emotional stress or under physical debility.

## RELAXATION EXERCISES

Relaxation exercises should be given with an aim to freedom of the organs of speech, especially in the case of a stammerer, as a means of cultivating good posture in sitting and standing, and as a change of exercise to ward off fatigue. Relaxation exercises not only relieve tense speech muscles, but are a means to mental and physical hygiene.

The ideal position to begin relaxation exercises is while lying comfortably on the back. This can be done at home if not in school. The muscle groups, as legs, arms, shoulders, head, jaw, lips, and eyelids are tensed and then relaxed. Suggestive phrases such as the following may be used to direct the exercises. "Stretch out your right leg—let it fall"; "Grasp—let go"; "Open your eyes wide—fall asleep"; "Shut your lips tightly—yawn"; "Be a wooden soldier—be a rag doll."

### Tongue Exercises

For fluent, articulate speech there must be strength and flexibility of the lingual muscles. Perseverance with tongue exercises will reduce a thick, clumsy tongue to normal size and increase its flexibility.

The exercises may be performed in a mirror at first, but the aim is to register a tactile, not visual impression. Be sure that the tongue falls back into the bed of the mouth after each tensed position. Repeat each exercise two or three times.

1. *Point* the tongue straight out. The aim is to narrow the tongue, not to stretch it.
2. *Press* the tip of the tongue to the upper lip, to the gum immediately behind the upper teeth, to different spots on the hard palate until the soft palate is reached.
3. Let the tongue lie perfectly still in the bed of the mouth for a slow count of three.
4. Widen and narrow the tongue within the mouth.
5. Groove the tongue.
6. Curl the tip of the tongue under and roll it forward.
7. Arch the back of the tongue until it touches the hard palate.
8. Trill with the tongue.

### Jaw Exercises

Jaw exercises will help to correct the common fault of "talking through the teeth." The lower jaw is the door of the vowel chamber. The hinge must work freely in order to let the voice out of the body. The aim of the exercises is for flexibility of the jaw muscles, not for a wide opening.

1. Yawning or dropping the jaw relaxed.
2. Opening the mouth and closing it quickly and firmly.
3. Wagging the jaw up and down.
4. Moving the jaw from side to side.
5. Moving the lower jaw forward and backward.
6. Repeating:

| | |
|---|---|
| ah—ee | aw—ee |
| ee—ah | ee—aw |

## Lip Exercises

Strength and flexibility of the lips are necessary for clear production of the labial consonants and for beauty of tone in the production of the back vowels which require more or less rounding of the lips.

1. Press the lips together tightly. Release quickly.
2. Protrude the lips rounded as for "sh." Relax.
3. Protrude the lips squared as for "sh." Relax.
4. Curl the upper lip.
5. Stretch the lips toward one side and then toward the other.
6. Protrude the lower lip.
7. Trill with the lips.

## Speech Exercises

*Purposes*

1. *To improve the mechanical production of each element in its blending with other elements.*

For the production of good speech, strength and flexibility of the speech organs and precision of execution are essential. Each element is blended with and modified by the particular element which immediately precedes or follows it. In *Researches in Experimental Phonetics*, Dr. Scripture says: "It is an erroneous view that speech is made up of a series of independent elements. Not only does every individual sound change from beginning to end, but each one develops out of the preceding sound and into the following . . . a flow of sound not represented by spelling. A change from one sound to another is a fusion."

2. *To train the ear of the pupil to a critical appreciation of speech.*

Pupils will endeavour to improve their own speech when they have been trained to a critical appreciation of the mechanical production of speech and of the quality and quantity of tone which the emotional content of the word or phrase requires.

3. *To correct specific speech defects.*

In the correction of such defects as letter substitution, lisping, nasality, and foreign accent, the use of meaningless syllables in the speech drills prevents the child from being forced to make the double effort of attempting to form a new habit and at the same time to break an old one, as would be the case if familiar words were used. These syllables may be used later in correcting the misspoken words.

It should be remembered that auditory images cannot of themselves incite speech. If the auditory image were enough, the child would speak fluently as soon as the speech mechanism was functionally mature. Elements will be mispronounced if they are not clearly represented in the motor memory. It is important, therefore, that, in the correction of an imperfect sound, the child should have his attention directed to a correct tactile impression of the sound as well as to a correct auditory impression.

Speech exercises may be employed, also, to good purpose in the correction of stammering.

## Preliminary Speech Exercises for Children of Kindergarten Age

Before giving syllable drills to very young children, the teacher may have them imitate certain blatant sounds in nature or mechanics which have a resemblance to the sounds of the desired elements. Examples:

er—dog growling (g-r-r)
r—tongue trill
b—baby babbling
m—(final)—humming, cow mooing
w—soughing wind
sh—sh-h! be quiet!
n—wood sawing
th—angry gander (th-h-h)
l—bell ringing
z—bees buzzing
p—blowing out a candle
ch—railway train (ch-ch-ch)
v—aeroplane
k—coughing
oo—rooster (cock-a-doodle-doo!)
s—steam escaping from radiator

Then, while the tactile impression of the imitated sound is still fresh in the child's consciousness, syllables and words involving the desired sound may be given. In doing this, care should be taken not to separate the initial consonant from the following vowel; the consonant is formed *over* the vowel position.

### Vowel Sounds

The music and the beauty of speech depend upon the vowel, which may be so shaded as to express the whole gamut of human emotions. Unfortunately, the printed page does not afford an accurate representation of speech, by reason of the inadequacy of our alphabet to represent the sound elements. On a printed page the vowel, although the dominant factor in speech, has no more prominence of size or form than the consonant, nor is a strong vowel in an accented syllable more strongly portrayed than a weak form of vowel in an unaccented syllable. Consonants on a printed page, moreover, obscure vowels by sheer force of numbers. To a stammerer a consonant is a *bête noir.* In order to change the focus of the eye from the initial consonant to the vowel, therefore, a sentence or paragraph may be written on the blackboard in which all the consonants are in delicate white and all the vowels are in glaring red or yellow. This scheme may be elaborated by using two shades of the colour to differentiate between a vowel in an accented syllable or in a dominant word and a vowel in an unaccented syllable or in an unstressed word. The same device will be found useful in the correction of "breathy" speech.

Dictionaries and treatises on phonetics vary surprisingly in their statements as to the number of vowel elements, due chiefly to the desire of the writers to represent graphically the fine distinctions between vowels and consonants. According to Dr. Alexander Melville Bell, "a vowel is a syllabic sound moulded by a definite and momentarily fixed configuration of the free channel of the mouth; a vowel without a fixed configuration loses its syllabic effect and becomes a glide, and a glide with sibilation or friction in the oral channel becomes a consonant." All attempts to establish a complete distinction between vowels and consonants must be unsuccessful. The generally-accepted definition of a vowel, is that it is "unobstructed voice," which is a good working definition.

Hearing children should learn the vowels through the auditory sense. For this reason no attempt is made to define the various vowel positions. Detailed descriptions of the vowel elements may be found in any good work on phonetics or in any special text-book prepared for oral teachers of speech to the congenitally deaf. Where a hearing child's model is good, his vowel sounds are invariably good; if they are faulty, the teacher should seek to have him correct them through imitation of a good model.

Vowel sounds may be obscured by a tight jaw or by being produced too far back in the mouth. Drills for open vowel production should be begun with drills on "a" as in "father," as this vowel has the most relaxed position of jaw, tongue, and lips. Where forward production of tone is lacking, it will be found that there is failure to round the lips for the high back vowels; that is, "oo" (long), "oo" (short), "o" (long), "aw" and "o" (short).

In diphthongal vowels there is a radical element and a vanish. Sometimes a simple vowel sound is used where there should be a diphthongal sound. In such cases the pupil's ear should be trained to catch the glide in diphthongs. To do this the teacher may give the diphthong once or twice clearly, but with a very little exaggeration of the vanish. The child should not be asked to imitate it, however, until the teacher has repeated the sound several times without exaggeration.

Initial consonants and consonant combinations are moulded over vowel apertures, and should not be separated from the vowel impulse at any time in speech improvement exercises. Consonants may be drilled with the "natural vowel" or with any other vowel that the occasion may require. Final consonants are not so closely bound up with the vowels as are initial consonants, but their articulation is modified, nevertheless, by the preceding vowel.

## Vowel Exercises for Speech Improvement

Before beginning the vowel drills, a few relaxation exercises will be found to be beneficial, especially with stammerers. Freedom from constriction of the speech muscles and from tension of the muscles of the body generally is essential to good voice production.

Pupils should stand at a distance of about ten feet from the chart. Particular attention should be paid to posture—feet slightly apart, weight of body on the balls of the feet, knees normally pressed back, arms loosely hanging at the sides, head erect but not stiffly held. Good poise of body induces confidence and facilitates breath control.

The desirability of attaining musical quality and carrying power of voice should be uppermost in the mind of the pupil, rather than thought of a speech defect. Simulation of broadcasting or public-speaking may help to cultivate forward production of speech. The vowel drills should be short and given with vim.

The teacher may devise various arrangements of vowels for drill purposes. The following is a much-used form of chart:

*Long Vowel Drill*

| | | | |
|---|---|---|---|
| AH | ar | AW | au |
| | a(lm) | | a(ll) |
| | | | a(lk) |
| | | | o (r) |
| A-E | ay | O-E | oa |
| | ai | | ow |
| EE | e-e | OO | (r)ew |
| | ea | | (r)u-e |

The invariable spellings are set out in very bold type, preferably in bright colour. The secondary spellings may be added at discretion in smaller type. Stammerers find greater difficulty with short vowel syllables than with long vowel syllables, and should be given short vowel drills with initial and final consonants after they have gained confidence in production of the long vowels by themselves and in syllables, words, and sentences.

Vowel drills are given thus:

*One at a time:* ah, ā, ee, aw, ō, oo. (Like a series of monosyllabic words.)
*Two at a time:* ahā, āee, eeaw, awō, ōoo. (Like a series of two syllables equally stressed.)
*Three at a time:* ahāee, āeeaw, eeawō, awōoo.
*Four at a time:* ahāeeaw, āeeawō, eeawōoo.
*Five at a time:* ahāeeawō, āeeawōoo.
*Six at a time:* ahāeeawōoo.

The teacher or one of the pupils announces one of the groupings for the drill, and directs it with a pointer on the chart. Variety may be afforded by slightly stressing the first vowel of the group throughout, then the second vowel, and so on, so that there will be a similarity to the accentuation of syllables in words.

The vowel chart may be employed, also, for syllable drills, as set out under "Consonant Exercises for Speech Improvement." The consonant is written or attached in front of each vowel, but should be much less conspicuous in form than the vowels.

Word exercises and sentences similar to those given for consonant drills should be arranged for vowel drills, together with rhymes and verses in which the particular vowel being dealt with recurs.

## CONSONANT EXERCISES FOR SPEECH IMPROVEMENT

### WH (hw) (A breath consonant)

*Syllable Drill:* Round the lips as for the vowel "oo". Force the breath out through the opening, and follow the breath with any of the vowel sounds.

| *Initial* | | *Medial* | |
|---|---|---|---|
| wheel | when | horsewhip | somewhere |
| white | what | millwheel | bobwhite |
| whale | where | somewhat | overwhelm |

1. What did Winnie whisper to Willie?
2. Where is Wesley's wheel?
3. The old man's whiskers were white.
4. William gave the horse a whack with the whip.
5. Which boy whispered and which boy whistled?

Whistle, daughter, whistle; whistle, daughter dear.
I cannot whistle, mammy; I cannot whistle clear.
Whistle, daughter, whistle; whistle for a pound.
I cannot whistle, mammy; I cannot make a sound.

### To a Waterfowl

Whither, midst falling dew,
While glow the heavens with the last steps of day,
Far, through their rosy depths, dost thou pursue
Thy solitary way?

—*Bryant.*

### W (A voice consonant)

*Syllable Drill:* Round the lips as for the vowel "oo". Emit voice and glide into any of the vowel sounds.

| *Initial* | | *Medial* | |
|---|---|---|---|
| weed | woeful | sandwich | woodwork |
| wear | wife | Edward | spiderweb |
| wide | wore | redwing | reward |

1. We were away. We were weary.
2. Wallace will be rewarded with a watch.
3. We worked with a will to win.
4. "For they have sown the wind, and they shall reap the whirlwind."
5. "Wilful waste makes woeful want."

"This is the way we wash our clothes,
Wash our clothes, wash our clothes,
This is the way we wash our clothes,
On a cold and frosty morning."

"Whichever way the wind doth blow,
Some heart is glad to have it so;
Then blow it east, or blow it west,
The wind that blows, that wind is best."

### F (A breath consonant)

*Syllable Drill:* Press the inner edge of the lower lip against the edge of the upper teeth, and force the breath through the interstices. Open the position with any of the vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| fine | fat | suffer | diphthong | loaf | laugh |
| four | fully | laughter | nephew | staff | cough |
| farm | Philip | taffy | hyphen | calf | Joseph |

1. Fannie laughed at Philip when he fell over the footstool.
2. Phoebe is not afraid of fire-crackers.
3. Frank found a funny photograph of a fiddler.

"Every fiddler had a fine fiddle,
And a very fine fiddle had he."

"If I were a fairy and lived in a flower,
What fun, oh, what fun it would be!
I'm certain I never should sleep for an hour,
And I'd always have honey for tea."

"The fair breeze blew, the white foam flew,
The furrow followed free.
We were the first that ever burst
Into that silent sea."
—*Coleridge.*

V (A voice consonant)

*Syllable Drill:* Press the inner edge of the lower lip against the edge of the upper teeth as for "f", with slight vibration of the vocal chords. Open the position with any of the vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| veal | vendor | lives | oven | live | twelve |
| verse | violet | harvest | Vivian | five | Olive |
| vast | vinegar | vivid | every | of | brave |

1. Vernon saw a moving van.
2. Vera had five violets.
3. Invite Vivian to visit you in the village.
4. The violinist lives in a vine-covered villa in the Vale of Avoca.

"One, two, three, four, five,
I caught a hare alive."

"As I was going to St. Ives,
I met a man with seven wives,
Each wife had seven sacks,
Each sack had seven cats,
Each cat had seven kits,
Kits, cats, sacks, and wives,
How many were going to St. Ives?"

> "An inadvertent step may crush a snail
> That crawls at evening in the public path;
> But he that has humanity, forewarned,
> Will tread aside and let the reptile live."
> —*Cowper.*

### TH (A breath consonant)

*Syllable Drill:* Press the edges of the tongue to the edges of the upper teeth, with the teeth nearly closed, and send the breath stream out between the tongue and the front teeth. Open the position with any of the vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| thin | thirsty | anything | method | bath | doeth |
| thought | thigh | Arthur | youthful | teeth | fifth |
| thanks | Thursday | birthday | toothless | mouth | south |

1. Think about something that is thin.
2. My thumb is thick.
3. When is Martha's birthday?
4. Thor was the god of thunder.
5. Thank you for your kind thought of me.

> "When the wind is in the north,
> The skilful fisher goes not forth.
> When the wind is in the south,
> It blows the bait in the fishes' mouth."

> "He prayeth best who loveth best
> All things, both great and small."

### TH (A voice consonant)

*Syllable Drill:* With the tongue in the same position as for "th" breath, send vocalized breath out between the tongue and the teeth. Open the position with any of the vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| thee | this | father | clothing | breathe | with |
| then | that | mother | farthest | scythe | sheathe |
| than | these | brother | bathers | smooth | mouths |

1. This is mine, that is his, and those are yours.
2. They saw them there.
3. He is older than I.
4. Honour thy father and thy mother.
5. Breathe deeply and do not mouth your words.
6. "Base envy withers at another's joy."

"Old woman, old woman, old woman, quoth I,
O whither, O whither, O whither so high?
To brush the cobwebs out of the sky!
Shall I go with thee? Aye, by and by."

"Breathes there a man with soul so dead,
Who never to himself hath said,
This is my own, my native land?"
—*Sir Walter Scott.*

### S (A breath consonant)

*Syllable Drill:* With the teeth nearly closed, press the sides of the tongue against the upper teeth and gum. Direct the breath against the upper teeth. Give the sound initially with different vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| seed | city | pussy | oyster | pass | tents |
| Sadie | sighed | pencil | saucer | piece | laughs |
| cents | century | sister | muscle | advance | goose |

1. Sam sat on a soft seat.
2. Susan sewed the seams of her silk suit.
3. Miss Smith sang a solo on Sunday in the Sunday School.
4. "Least said, soonest mended."
5. "What is sauce for the goose is sauce for the gander."

Simple Simon met a pieman,
  Going to the fair;
Said Simple Simon to the pieman,
  Let me taste your ware.

"Music hath charms to sooth the savage breast,
To soften rocks, or bend a knotted oak."
—*William Congreve.*

### Z (A voice consonant)

*Syllable Drill:* With the tongue in the same position as for "s" and the teeth nearly closed, slightly vibrate the vocal chords. Combine this sound initially with any vowel sound.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| zeal | zephyr | bazaar | noisy | buzz | size |
| zone | zither | Amazon | Zanzibar | sneeze | does |
| zinc | Zulu | season | zigzag | rooms | ease |

1. The bees buzzed and buzzed.
2. Eliza gazed at the zebra and the zebu at the zoo.
3. Zoe resumed her work resolutely.
4. Zephyrs are gentle breezes.
5. Hazel sowed azalea and zinnia seeds.

"Buzz! Buzz! This is the song of the bee;
His legs are of yellow, a jolly good fellow,
And yet a great worker is he."

"While words of learned length and thundering sound
Amazed the gazing rustics ranged around—
And still they gazed, and still the wonder grew
That one small head could carry all he knew."
—*Oliver Goldsmith.*

### SH (A breath consonant)

*Syllable Drill:* With the lips slightly squared and the tip of the tongue down as for "s", direct the breath against the edges of the nearly closed teeth. Open the position with any of the vowel sounds.

(The sound of "sh" is represented sometimes by "ch", "ti", "ci", and "si".)

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| shade | shoes | washing | machine | dish | hush |
| shall | sure | dashed | vicious | cherish | bluish |
| shine | shelf | mention | ocean | English | sash |

1. Shake hands with Charlotte.
2. Put the sugar on the shelf.
3. We found some seashells on the seashore.
4. The shepherds sheared the sheep with sharp shears.

"Shoe the old horse and shoe the old mare;
But let the little colt go bare."

"How sweet," said the swan,
"To glide and splash!
And not, like the frog,
To dive and dash."

### ZH (A voice consonant)

*Syllable Drill:* With the lips and tongue in the same position as for "sh", vibrate the vocal chords slightly. Open the position with any of the vowel sounds.

(The sound of "zh" is sometimes represented by "si", "zi", "su", "z", and "g".)

measure
treasure
leisure
azure
seizure
rouge
glazier
Asia
adhesion
mirage
jardiniere
osier

1. The treasure was found in Persia.
2. Do you usually have much leisure?
3. Measure the height of the jardiniere.

> "A measure of leisure and pleasure
> Indeed is a treasure,
> But small is the pleasure
> Of too much of pleasure or leisure."

> "Sleep, sleep, my treasure,
> The long day's pleasure
> Has tired the birds. To their nests they creep,
> And all the daisies are fast asleep." —*Nesbit.*

### P (A breath consonant)

*Syllable Drill:* Press the lips together and, with a soft expulsion of breath, give the sound initially with different vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| pail | pansy | paper | lapped | cape | Philip |
| post | pause | leaping | carpet | keep | lamp |
| past | pecks | pumpkin | hopped | coop | step |

1. Pass the pepper to Paul, please.
2. Put the pencil in your pocket.
3. Practice makes perfect.
4. "Peter Piper picked a peck of pickled peppers."

> "Peter, Peter, Pumpkin-eater,
> Had a wife and couldn't keep her;
> Put her in a pumpkin shell,
> There he kept her very well."

> Pease porridge hot, pease porridge cold,
> Pease porridge in the pot, nine days old!

> "Pygmies are pygmies still, though perched on Alps,
> And pyramids are pyramids in vales."

### B (A voice consonant)

*Syllable Drill:* Press the lips together as for "p", only a little more tightly and vibrate the vocal chords. Open the position with any of the vowel sounds. ("b" final has a slight explosion as of "p".)

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| base | beauty | baby | cabbage | cob | robe |
| beet | boot | robin | babble | club | web |
| bind | ball | Robert | marbles | Arab | tube |

1. Bye, bye, baby.
2. Bill bought a bat and ball.
3. Ben bounced the ball to Bess.
4. "A beautiful behaviour is better than a beautiful form."

"Rub, a dub dub,
Three men in a tub,
And who do you think they be?

The butcher, the baker,
The candle-stick maker,
Turn them out knaves all three."

"Birds on the boughs before the buds
Begin to burst in spring,
Bending their heads to the April floods,
Too much out of breath to sing."

### T (A breath consonant)

*Syllable Drill:* Press the edge of the tongue against the upper gum behind the upper teeth, and with a soft expulsion of breath give the sound initially with different vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| tame | time | matter | plenty | Kate | meet |
| tam | tell | custard | little | cent | laughed |
| tail | taste | until | winter | sit | passed |

1. Take the top to Ted.
2. Tip-toe to the table.
3. Tell Tom the tale about Tiny Tim.
4. "Time and tide wait for no man."

Little Tommy-Tittle mouse,
Lived in a little house,
"I'll rattle and prattle,
But never, never tattle."
Said little Tommy-Tittle mouse.

"The tumult and the shouting dies—
The captains and the kings depart—
Still stands Thine ancient sacrifice,
An humble and a contrite heart,
Lord God of Hosts, be with us yet,
Lest we forget, lest we forget!"
—*Kipling.*

### D (A voice consonant)

*Syllable Drill:* Press the edge of the tongue against the upper gum as for "t", with slight vibration of the vocal chords. Open the position with any of the vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| Dame | Dan | daddy | idle | said | told |
| deep | dense | ladder | adding | mend | dead |
| damp | den | sends | dreadful | stood | and |

1. Don't do it.
2. Dora didn't do it.
3. Dan danced with Daisy.
4. Did Dan give a dime for the dates?
5. "Do noble deeds, not dream them all day long."

"Dickory, Dickory dock,
The mouse ran up the clock,
The clock struck one, and down he came,
Dickory, Dickory dock."

"Handy Spandy, Jack-a-dandy,
Loved plum cake and sugar candy."

"If a thought comes quick of doing kindness to a friend, do it that very moment! Don't put it off—Don't wait. What's the use of doing a kindness, if you do it a day too late."—*Charles Kingsley.*

### K (A breath consonant)

*Syllable Drill:* Arch the back of the tongue against the roof of the mouth and, with a soft expulsion of breath, give the sound initially with different vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| keen | cap | walking | liquor | peek | block |
| cape | Christmas | looked | biscuit | ache | pack |
| cold | came | croquet | cocoa | make | toque |

NOTE.—"c," "ch," and "qu" sometimes have the sound of "k"

1. Cora had a cup of cocoa, not coffee.
2. Kate cut the Christmas cake.
3. Christopher Columbus discovered America.

> "Girls and boys, come out to play,
> The moon doth shine as bright as day,
> Come with a whoop, come with a call,
> Come with a good will or not at all."

> "Keep up your courage, and care will depart.
> Sunshine will shorten each mile.
> Brighten your corner, open your heart.
> Lift up your head and smile."

### G (A voice consonant)

*Syllable Drill:* Arch the back of the tongue as for "k", with slight vibration of the vocal chords. Open the position with any of the vowel sounds. ("g" final has a slight explosion of breath as of "k".)

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| geese | get | bigger | bugle | rug | vague |
| give | goat | hungry | agony | frog | morgue |
| game | gone | Ogden | druggist | prig | league |

1. Gus will go to the game.
2. Gooseberries are green.
3. The gander, the goose, and the goslings went under the gate.
4. "A good beginning makes a good ending."

> "Goosey, Goosey, gander,
> Who stands yonder?
> Little Betsy Baker;
> Take her up and shake her."

> "He giveth little who gives but tears,
> He giveth best who aids and cheers."

> "I sprang to the stirrup, and Joris, and he;
> I galloped, Dirck galloped, we galloped all three;
> 'Good speed,' cried the watch, as the gate-bolts undrew;
> 'Speed,' echoed the wall to us galloping through."
>
> —*Browning.*

### CH (A breath consonant)

*Syllable Drill:* Raise the tongue against the upper gum as for "t", lips squared as for "sh", and with a soft expulsion of breath, give the sound initially with any vowel sound.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| cheek | charge | orchard | Richard | touch | catch |
| chair | chop | watch-chain | pitcher | which | bunch |
| chose | church | scotch-bread | matches | arch | reach |

1. Choose the cheap chair.
2. Charlie likes clam chowder, lamb chops, and cheese.
3. Chester chased the chipmunk away from the chestnuts.
4. "Don't count your chickens before they are hatched."

Chin, chin Chinaman,
Chin, chopper chee,
Chinchopper, chinchopper,
Chinchopper, chee.

"Chirp," said the mother,
"We chirp," said the seven,
So they chirped cheery notes
In the grass soft and even.

"Chilly it may be down your way
But the high south field has cheer;
On the sunward side of the chestnut stump,
The woodgrubs wake and appear."
—*C. G. D. Roberts.*

### J (A voice consonant)

*Syllable Drill:* Assume position of lips and tongue as for "ch". Vibrate the vocal chords slightly, and open the position with any of the vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| Jean | gem | agent | religion | gage | edge |
| giant | jam | midget | oranges | ridge | voyage |
| June | John | bulging | Eugene | George | sage |

1. Jean played a joke on John.
2. Jennie Jones is gentle and generous.
3. The judge sent the joy-rider to jail.
4. Jack enjoys jelly, jam, and orange juice.

Punch and Judy fought for a pie,
Punch gave Judy a blow in the eye.

There was an old woman had three sons,
Jerry, and James, and John;
Jerry was hanged, James was drowned,
John was lost, and never was found,
And there was an end of the three sons,
Jerry, and James, and John!

### L (As a voiced consonant)

*Syllable Drill:* Press the forepart of the tongue against the upper gum, letting the vocalized breath escape over the sides. Open the position with any of the vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| lean | leg | cellar | wheeling | pole | doll |
| lone | last | palace | tells | style | Nell |
| lard | lock | pillow | collection | feel | till |

1. Stop, look, and listen!
2. Let Lucy look at the leaf.
3. Roll the ball to Nell in the hall.
4. "A little leaven leaveneth the whole lump."

"London Bridge is falling down, falling down, falling down,
London Bridge is falling down, my fair lady!"

"Large streams from little fountains flow,
Tall oaks from little acorns grow."

"The curfew tolls the knell of parting day,
The lowing herd winds slowly o'er the lea,
The ploughman homeward plods his weary way,
And leaves the world to darkness and to me."
—*Gray.*

### R (As a voiced consonant)

*Syllable Drill:* Widen the tongue against the upper side teeth with the tip turned up but free. Send vocalized breath over the front of the tongue, so that it vibrates more or less. Open the position with any of the vowel sounds.

(When "r" follows a vowel sound, it modifies the vowel sound.)

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| ride | rag | large | nearer | air | poor |
| rain | wreck | adoring | endurance | year | bar |
| roll | wrong | early | firmer | ire | core |

1. Rose reached for the ruler and for the red book.
2. Robert ran across the room with Raymond.
3. "Great rats, small rats, lean rats, brawny rats, brown rats, black rats, gray rats, tawny rats."
4. "A rolling stone gathers no moss."

Riddle-me, riddle-me, riddle-me-ree,
Perhaps you can tell, what this riddle may be;
As deep as a house, as round as a cup,
And all the king's horses can't draw it up.

"Truth crushed to earth shall rise again;
The eternal years of God are hers;
But error wounded, writhes in pain,
And dies among his worshippers."
—*William Cullen Bryant.*

### M (A nasal consonant)

*Syllable Drill:* Press the lips together as for "b" while sending vocalized breath through the nasal passages. Open the position with any of the vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| meet | mountain | summer | remember | room | some |
| mail | merry | coming | November | home | gum |
| mole | mansion | brooms | mimic | name | foam |

1. March with Maud.
2. May I make a mat?
3. The men may march many miles.
4. "Many men of many minds, many men of many kinds."
5. The more, the merrier.

"My maid, Mary, she minds her dairy,
While I go a-hoeing and mowing each morn."

"To-morrow'll be of all the year the maddest, merriest day,
For I'm to be Queen o' the May, mother, I'm to be Queen
o' the May."

"I've heard bells chiming full many a clime in,
Tolling sublime in cathedral shrine;
While at glib rate brass tongues would vibrate;—
But all their music spoke naught like thine."

### N (A nasal consonant)

*Syllable Drill:* Press the edge of the tongue against the upper gum behind the upper teeth as for "d", while sending vocalized breath through the nasal passages. Open the position with any of the vowel sounds.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| nail | gnat | month | money | ran | down |
| night | kneel | dinner | nonsense | seen | then |
| noon | knock | send | running | moon | John |

1. Nod to Ned.
2. Kneel down.
3. Nine and one are ten.
4. Nancy needs nothing new now.
5. Is it number nine or nineteen?
6. "A little nonsense now and then is relished by the wisest men."

The lion and the unicorn
Were fighting for the crown;
The lion beat the unicorn
All around the town.

### H (A breath consonant)

"H" is an expulsion of breath over a vowel position. It should be given, therefore, before the various vowel sounds. The intensity of the expulsion of breath varies according as the word is accented or unaccented. In English the breath diminishes slightly in force before the vowel is given.

### X (As a compound breath consonant)

Note.—When "X" occurs initially it has the sound of "Z".

"X" has the sound of "ks" after the various vowel sounds, except when the following syllable of the word begins with a vowel sound. In which case it has usually the sound of "gz". In both productions, the first element of the compound is held until the position of the second is taken.

### Y (As a voice consonant)

"Y" does not occur finally as a consonant sound. It is sometimes a pure vowel, usually equivalent to "i" short as in "pretty." The position of "y" is like that of the long vowel "e", except that the tongue is a little closer to the hard palate. It is in reality a semi-vowel when stressed, and it should be given with the various vowel sounds as it glides into the following vowel.

### NG (A nasal voice consonant)

"NG" as a single consonant occurs finally in a syllable. The tongue is arched as for "k" or "g", and vocalized breath is sent through the nasal passages in the same manner as for the other two nasal continuants "m" and "n". The place of articulation of the tongue with the roof of the mouth varies according as the preceding vowel is a front or back vowel. The sound should be given, therefore, with a preceding vowel.

### Pr

Pr—The tip of the tongue is raised for "r" before or at the same time as the lips are pressed together for "p". (Both elements are non-vocal.) Drill syllables with "r", initial, and then with "pr", initial.

*Initial*

prime
priest
proud
prunes
prince

present
prepare
pretty
problems
produce

*Medial*

impression
reproach
supreme
soprano
appropriate

1. The princess is pretty.
2. Ask the price of the prunes.
3. Pretty Polly! Pretty Polly!
4. Practise what you preach.

Pronounce your words properly,
  Have pride in your speech;
Don't prattle like babies,
  When school-age you reach.

"I trod the park with princely air;
I filled my crop with richest fare."
—"*The Lark and the Rook.*"

### Br

Br—Produced similarly to "pr". (Both elements are vocal.)

*Initial*

breeze
brown
bread
brush
bring

breakfast
bright
branch
brains
broom

*Medial*

zebra
abroad
Hebrew
Labrador
celebrate

1. Be brave.
2. Be bright.
3. Breathe deeply.
4. We had brown bread for breakfast.
5. Mr. Brown broke a branch off the bramble bush.

> "Here we go round the bramble bush,
>   The bramble bush, the bramble bush;
> Here we go round the bramble bush,
>   On a cold and frosty morning."

> "Rule Britannia, Britannia rule the waves!
> Britons never shall be slaves."

> "Warm broke the breeze against the brow.
>   Dry sang the tackle, sang the sail."
>
> —"*The Voyage.*"

### Fr or phr

Fr—The edge of the tongue is raised for "r" before or at the same time as the lower lip is closed against the upper teeth for "f". (Both elements are non-vocal.) Give syllable drill with "r", initial, and then with "fr".

*Initial*

Frank
fresh
fruit

Friday
fringe
fretful

*Medial*

infrequent
paraphrase
affright

refreshments
diaphragm
defraud

1. We had fried fish on Friday.
2. Fred is afraid of frogs.
3. Frank can speak French.
4. "A friend in need is a friend indeed."

> "She went to the fruiterer's
>   To buy him some fruit;
> But when she came back
>   He was playing the flute."
>
> —"*Mother Goose.*"

"Give us men!
Men—from every rank,
Fresh and free and frank,
Give us Men—I say again,
Give us Men."

—*Bishop of Exeter.*

## Thr

Thr—The tip of the tongue is raised, and the breath blown over the edge for "th", and with the same impulse of breath the tip of the tongue vibrates slightly for "r". (Both elements are non-vocal.) Give syllable drill with "r", initial, and then with "thr", initial.

thrive
thrice
throw
thrush
throb
threaten
threshold
thrifty
throttle

1. Thrice means three times.
2. Theda has a sore throat.
3. The song of the thrush thrilled me.

"O larks, sing out to the thrushes,
And thrushes sing to the sky!
Sing from your nests in the bushes,
And sing wherever you fly."

## Tr

Tr—The edge of the tongue is pressed against the upper gum for "t", and immediately released for the vibration in the "r". (Both elements are non-vocal.) Drill syllables with "r", initial, and then with "tr", initial.

*Initial*

trade
truth
tramp
trouble
trespass
traffic

*Medial*

mattress
attractive
electric
illustrious
contribute
contralto

1. Trit, trot to the barber shop.
2. Try, try again.
3. We can trust a truthful person.
4. The Indian tribe followed the trail.
5. To do the truth, try to think the truth.

"If you try and try and try,
And do not pout nor cry,
You will find bye and bye
It is best to try and try."

"O, a trouble's a ton or a trouble's an ounce
Or a trouble is what you make it;
And it isn't the fact that you're hurt that counts,
But only how did you take it."
—*Edmund Vance Cooke.*

### Dr

Dr—is produced similarly to "tr." (Both elements are vocal.)

*Initial*

drill
dream
dress
dromedary
dramatize
dreadful

*Medial*

hundred
children
Andrew
hydrant
quadruped
scoundrel

1. Andrew had a dreadful dream.
2. Dryden has a drum.
3. Drucilla's dress is dry.
4. Draw a picture of a drake.
5. I dreamed that I was driving a dromedary.

"Driddlety drum, driddlety drum,
There you see the beggars come;
Some are here, and some are there,
And some are gone to Chidley Fair."
—"*Mother Goose.*"

"In the intervals of dreams I hear
The cricket from the droughty ground;
The grasshoppers spin into my ear
A small innumerable sound."
—*Archibald Lampman in "Heat."*

### Cr

Cr—The back of the tongue is arched for the "k", and this position is held until the tip is raised slightly for "r". (Both elements are non-vocal.) Drill syllables with "r", initial, and then with "cr", initial.

*Initial*

cream
crack
crust
credit
crackers
crumble

*Medial*

lacrosse
concrete
microbe
recreation
acrobat
increase

1. The crow caws.
2. The rooster crows.
3. The cream jug is cracked.
4. The baby crept to the sofa and crawled up on it.

"There was a crooked man, and he walked a crooked mile,
He found a crooked sixpence against a crooked stile:
He bought a crooked cat, which caught a crooked mouse,
And they all lived together in a little crooked house."

—"*Mother Goose*."

"Cruel children, crying babies,
All grow up as geese and gabies,
Hated, as their age increases,
By their nephews and their nieces."

—*Robert Louis Stevenson.*

### Gr

Gr—is produced similarly to "cr". (Both elements are vocal.) Drill syllables with "r", initial, and then with "gr", initial.

| *Initial* | | *Medial* | |
|---|---|---|---|
| grain | grizzly | geography | phonograph |
| grind | grocery | transgress | congregation |
| grease | grasshopper | congratulate | disgrace |

1. The grey goose was greedy.
2. The gravy was greasy.
3. Greta saw a grasshopper on the ground.
4. His great-grandmother lived in Greece.

"Around the green gravel, the grass grows green.
And all the pretty maids were plain to be seen."

—"*Mother Goose*."

"Through all the pleasant meadow-side
The grass grew shoulder-high,
Till the shining scythes went far and wide
And cut it down to dry."

—*Robert Louis Stevenson.*

### Pl

Pl—The forepart of the tongue is raised for "l" before or at the same time as the lips are pressed together for "p". (Both elements are non-vocal.) Give syllable drill for "l", initial, and then for "pl," initial.

| *Initial* | | *Medial* | |
|---|---|---|---|
| plate | platter | application | perplex |
| please | pleasure | multiply | replenish |
| plum | plentiful | implement | compliment |

1. Please pass the plate of plums.
2. Apples are plentiful this year.
3. The boy planned to plunder the plover's nest.

"Work while you work,
 Play while you play.
 That is the way to be happy and gay."

"What do we plant when we plant a tree?
We plant the ship, which will cross the sea—
We plant the mast to carry the sail;
We plant the planks to withstand the gale—
The keel, the keelson, the beam, the knee;
We plant the ship, when we plant the tree."
—*Henry Abbey.*

### Bl

Bl—is produced similarly to "pl". (Both elements are vocal.)

| *Initial* | | *Medial* | |
|---|---|---|---|
| blood | blazing | goblin | trembling |
| blame | blossoms | oblige | resemblance |
| Blanche | blockade | oblong | unblushingly |

1. Blanche has blue eyes and black hair.
2. I like bluebirds better than blackbirds.
3. Blake's nose bled.
4. Who was to blame for the blot on the blue book?

"Oh! March that blusters and March that blows,
What colour under your footstep glows!"
—*Celia Thaxter.*

"Whichever way the wind doth blow,
 Some heart is glad to have it so;
Then blow it east or blow it west,
 The wind that blows that wind is best."

## Cl

C —The back of the tongue is arched for the "k" and held until the fore part is raised for "l". (Both elements are non-vocal.) Give syllable drill with "l", initial, and then with "cl".

| *Initial* | | *Medial* | |
|---|---|---|---|
| climb | clumsy | decline | enclosure |
| class | clever | overclouded | cyclone |
| clock | Clara | unclasp | declaration |

1. Keep your clothes clean.
2. The class clapped their hands.
3. Hang your cloak in the clothes-closet.
4. Clyde took his cloth coat to the cleaners.

"Click, clack, click, clack,
Off we go on horseback."

"Hugged in the clinging billow's clasp,
From sea-weed fringe to mountain heather,
The British oak with rooted grasp
Her slender handful holds together;—
With cliffs of white and bowers of green,
And Ocean narrowing to caress her,
And hills and threaded streams between:—
Our little mother isle, God bless her!"

—*Oliver Wendell Holmes.*

## Gl

Gl—is produced similarly to "cl". (Both elements are vocal.)

| *Initial* | | *Medial* | |
|---|---|---|---|
| globe | glitter | foxglove | inglorious |
| glimpse | gladness | neglect | epiglottis |
| Gladys | glacier | conglomeration | hieroglyphics |

1. Gladys is glad that it is not a gloomy day.
2. The clean glasses gleam in the light.
3. Gay, giggling girls are always gabbling.

I'm glad there are glow-worms
To gleam in the night,
Like glistening fairies—
A glorious sight.

"That orbèd maiden with fire laden
Whom mortals call the moon,
Glides glimmering o'er my fleecy floor
By the midnight breezes strewn."

### Fl or Phl

Fl—The forepart of the tongue is raised for "l" before or at the same time as the lower lip is pressed against the upper teeth for "f". Drill syllables with "l", initial, and then with "fl", initial.

| *Initial* | | *Medial* | |
|---|---|---|---|
| flood | Floyd | trifling | pamphlet |
| flesh | phlox | reflection | superfluous |
| flag | phlegm | influence | afloat |

1. Flossie fell flat on the floor.
2. The moth flew into the flame.
3. Fireflies are like little flames flashing in the dark.
4. Birds of a feather flock together.

"Snowflakes, snowflakes,
Flying through the air,
Little fairy frosty things
Flutter everywhere."
—*Marjorie Burrows.*

"How fleet is a glance of the mind!
Compared with the speed of its flight,
The tempest itself lags behind,
And the swift wingèd arrows of light."

### Sl

Sl—The sound of "s" is continued softly until the tongue is raised for the "l" position. Drill syllables with "l" initial and then with "sl".

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| sleep | slavery | enslave | cowslip | whistle | nettle |
| sledge | slippery | parsley | dislodge | hustle | muscle |
| slot | slowly | mistletoe | Wesley | apostle | castle |

1. Wesley has a sled and a sleigh.
2. We like to slide on the slippery sidewalks.

3. Lucy slipped and slopped the milk.
4. "He slept the sleep of the just."

"To bed! To bed! said Sleepy Head;
Tarry a while! said Slow."

"Around him the white clouds were sleeping,
And under him slumbered the sea."
—*F. G. Scott in "The Sprite."*

"How long wilt thou sleep, O sluggard?
When wilt thou arise out of thy sleep?
Yet a little sleep,
A little slumber,
A little folding of the hands in sleep."
—*Proverbs VI.*

## Sp

Sp—The sound of "s" is continued until the lips are pressed together for "p". (Both elements are non-vocal.) Give vowels with "p", initial, and then with "sp", initial.

| *Initial* | | *Medial* | |
|---|---|---|---|
| spend | sparrow | conspicuous | auspicious |
| spoon | spinach | transport | suspend |
| spade | Spaniard | inspector | expose |

1. Spiders spin webs.
2. We had spinach and asparagus.
3. Good speech helps our spelling.
4. The inspector wore spectacles.

"I spin, and spin, and spin my top,
Spin my top, spin my top.
And all it does is spin and stop,
Spin and stop, spin and stop."

Keep yourself spick and span;
Speak the very best you can.

"To see the spider sit and spin
Shut with her web of silver in,
You'd never, never, never guess
The way she gets her dinner."

### Spr

Spr—The sound of "s" is continued until the lips are closed for "p", together with the raising of the tongue for "r". Give vowels with "pr", initial, and then with "spr".

| *Initial* | | *Medial* | |
|---|---|---|---|
| sprite | sprouted | offspring | watersprite |
| sprang | sprightly | expression | besprinkled |
| sprinkle | sprayer | bedspread | mispronounce |

1. Mary sprinkled the clothes and spread the bread.
2. Old potatoes sprout in the spring.
3. The sprinter sprained his ankle.
4. Sadie is as spry as a sprite.

"With brightest sunshine round me spread
Of Spring's enclouded weather,
In this sequestered nook how sweet
To sit upon my orchard seat!"
—*Wordsworth.*

### Sm

Sm—The sound of "s" is continued until the lips are pressed together for "m". (Both elements are non-vocal.) Drill syllables with "m," initial, and then with "sm".

| *Initial* | | *Medial* | *Final* |
|---|---|---|---|
| smile | smilax | dismiss | heroism |
| smart | smoking | blacksmith | chasm |
| small | smoulder | cosmos | prism |

1. Smile but do not smirk.
2. That small boy is smart.
3. Smooth out the smock.
4. I smell smoke.

"The house cat sits and smiles and sings,
And knows a lot of secret things."

"October and the crimsoned trees
The smell of smoke upon the breeze,
The morning mist and autumn's chill,
The brown of death upon the hill—
And yet a sense of loveliness
Which pen nor brush cannot express."
—*Edgar A. Guest in "October."*

### Sn

Sn—The sound of "s" is continued until the edge of the tongue is closed against the upper gum for "n". (Both elements are non-vocal.) Drill syllables with "n," initial, and then with "sn".

| *Initial* | | *Medial* |
|---|---|---|
| sneeze | sniper | rattlesnake |
| snatch | snaffle | parsnip |
| snake | snarl | ensnare |

1. When Ned was snoozing, he snored.
2. Snuff will make you sneeze.
3. The dog snarled at the snapping turtle.
4. The animal sniffed at the snare.

"Snail, snail, put out your horns
I'll give you bread and barley corns."
—"*Mother Goose.*"

"November the old, lean widow,
Sniffs and snivels and shrills,
And the bowers are all dismantled,
And the long grass wets and chills."
—*William E. Henley.*

### St

St—The sound of "s" is continued until the edge of the tongue is closed against the upper gum for "t". (Both elements are non-vocal.) Give vowel sounds with "t", initial, and then with "st". Also give syllable drill with "st", final.

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| steam | stubborn | constable | circumstances | last | coast |
| style | Stanley | majesty | establish | lost | repast |
| stamp | stable | extension | consistent | nest | finest |

1. Stand still.
2. Stand steady.
3. Stop staring.
4. Stanley stood on the stool.
5. "East or west, home is best."
6. "Last but not least."

"Once I saw a little bird
Come hop, hop, hop;
So I cried, 'Little bird,
Will you stop, stop, stop?'"
—"*Mother Goose.*"

"Sounds of the village grow stiller and stiller,—
Stiller the notes of the birds on the hill;
Dusty and dim are the eyes of the miller,
Deaf are his ears with the moil of the mill."
—*Robert Louis Stevenson.*

### Str

Str—The sound of "s" is continued while the edge of the tongue is raised for "tr". Drill in syllables with "tr", initial, and then with "str".

| *Initial* | | *Medial* | |
|---|---|---|---|
| stretch | strengthen | industrious | destroy |
| strong | structure | ostrich | instruction |
| strict | stratagem | estrange | extravagant |

1. That swimmer has a strong stroke.
2. Stretch the string tight.
3. The stranger strolled about the streets in Stratford.
4. "Strike while the iron is hot."

Peacocks strut, big boys stride;
That's the way they show their pride.

"No soil upon earth is so dear to our eyes
As the soil we first stirred in terrestrial pies."
—*Oliver Wendell Holmes.*

### Sk or Sc

*Sk or Sc*—The sound of "s" is continued softly until the back of the tongue is arched for "k". Give vowels with "k", initial, and then with "sk".

| *Initial* | | *Medial* | | *Final* | |
|---|---|---|---|---|---|
| skate | school | Muskoka | mosquito | mask | mosque |
| scarf | skipper | discourage | unscathed | tusk | arabesque |
| Scotch | scoundrel | periscope | landscape | desk | brusque |

1. Kate likes to skate.
2. Cora wore her scarf to school.
3. How did the scoundrel escape?
4. Kenneth has a scooter and a pair of skates.

"Barefoot boys scud up the street,
Or scurry under sheltering sheds;
The school-girl faces pale and sweet,
Gleam from the shawls about their heads."
—*James Whitcomb Riley.*

"Listen to the Rain!
Ah! It's angry now—I fear.
'Tis a scolding voice you hear!
How it scolds the drooping trees,
How it scolds the languid breeze,
How it scolds the birds, poor things,
For the dust upon their wings!"
—*Isobel Ecclestone Mackay.*

### Scr

*Skr or Scr*—The sound of "s" is continued until the tongue is arched for "k" and the front raised for "r". Give vowels with "cr", initial, and then with "scr."

| *Initial* | | *Medial* | |
|---|---|---|---|
| scrape | scribble | subscribe | transcript |
| scroll | scripture | prescription | excruciating |
| screw | scrimmage | inscrutable | discreet |

1. I heard her scream and screech.
2. He scribbled a note with a scratchy pen.
3. Rob had pictures of skyscrapers in his scrapbook.

"Who got in scrapes, an endless score,
And always laid them at my door,
Till many a bitter bang I bore?
My Cousin."
—*Thomas Hood.*

On a scraggy rock a screech-owl sat,
And screeched and screeched
Till he frightened the bat.

### Tw

*Tw*—The lips are rounded as for "w" and the tongue raised to the "t" position at the same time. Give vowels with "t", initial, and then with "tw".

| *Initial* | | *Medial* | |
|---|---|---|---|
| twice | twig | entwine | repertoire |
| twelve | twain | between | untwist |
| twenty | tweak | westward | outward |

1. Twice ten are twenty.
2. The bird said, "Tweet, tweet."
3. The twins have tweed overcoats.
4. Don't twiddle your thumbs.

"Twinkle, twinkle, little star,
How I wonder what you are,
Up above the world so high,
Like a diamond in the sky."

### Dw

*Dw*—is produced similarly to "tw". (Both elements are vocal.)

| *Initial* | *Medial* | |
|---|---|---|
| dwelling | Edward | hardware |
| dwarf | sandwich | redwinged |
| dwindle | sidewalk | headway |

1. The dwarf was eating a sandwich.
2. Edwin was on the sidewalk.
3. Edward saw a redwinged blackbird.
4. His fortune dwindled away.

"Oh Columbine, open your folded wrapper,
Where two twin turtledoves dwell,
Oh Cuckoo-pint, toll me the purple clapper,
That hangs in your clear, green bell."
—*Jean Ingelow.*

### Sw

*Sw*—The sound of "s" is continued until the lips are rounded for "w". Drill in syllables with "w", initial, and then with "sw".

| *Initial* | | *Medial* |
|---|---|---|
| sweet | Sweden | forswear |
| swarm | sweater | chimney-sweep |
| swollen | swamp | assuage |

1. Swallows fly swiftly.
2. The Swiss live in Switzerland.
3. The bluebird was swinging and swaying in the apple tree.
4. "This is the way we sweep the floor," etc.

"Swiftly, swiftly flew the ship,
Yet she sailed softly, too;
Sweetly, sweetly blew the breeze—
On me alone it blew."
—*Coleridge.*

### Qu

Qu (kw)—The back of the tongue is raised for the "k" position and held until the lips are rounded for "w". Give vowels with "k" sound initial and then with "q" (kw).

| *Initial* | | *Medial* | |
|---|---|---|---|
| quite | quality | acquaintance | frequent |
| quaint | question | liquid | earthquake |
| quart | quotient | banquet | equator |

1. Kenneth quit quite early.
2. Quakers wear quaint, quiet-coloured clothes.
3. "It is quality that counts, not quantity."

"Pussy-cat, pussy-cat, where have you been?
I've been to London to see the Queen."

"As quiet as the lake that lies beneath me,
As quiet as the tranquil sky above me,
As quiet as the heart that beats no more,
This convent seems; above, below, all is peace."

### Squ

Squ (skw)—The sound of "s" is continued until the back of the tongue is raised for "k" and the lips rounded for "w". Give vowels sounds with "qu" and then with "squ."

| *Initial* | | *Medial* | |
|---|---|---|---|
| squaw | squander | disqualify | esquire |
| squeeze | squadron | misquote | |
| squint | squirrel | exquisite | |

1. Squat down.
2. Don't squirm.
3. Draw a square.
4. The squire squandered his money.
5. The boys squabbled about the squabs.

"The squalling cat and the squeaking mouse,
The howling dog by the door of the house,
The bat that lies in bed at noon,
All like to be out by the light of the Moon."
—*Robert Louis Stevenson.*

"The tender infant, meek and mild,
Fell down upon a stone;
The nurse took up the squealing child,
But still the child squealed on."
—*Samuel Johnson.*

## REFERENCE BOOKS

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2. *Speech Training for Children*, Smiley Blanton. The Century Co.
3. *Defects of Speech*, Ida M. Ward. J. M. Dent & Sons, Toronto.
4. *Manual of Speech Training*, Frederick and Louise Martin. Published by the Authors, Ithaca, New York.
5. *The Technique of Speech*, Dora Duty Jones. Harper & Brothers, New York and London.
6. *The Natural Method of Voice Production in Speech and Song*, Floyd S. Mickey. Charles Scribner's Sons.
7. *Specimens of English Phonetics*, Walter Ripman. Dutton Co., N.Y.
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14. *Faults of Speech*, Alex. Melville Bell. Volta Bureau, 1537-35th St., N.W., Washington, D.C.
15. *Speech Correction*, Borden & Busse. F. C. Crofts & Co., New York.
16. *No Need to Stammer*, H. St. John Rumsey. Methuen & Co., Ltd., London, Eng.
17. *Stammering and Its Permanent Cure*, Alfred Appelt. Methuen & Co., Ltd., London, Eng.
18. *Stammering and Cognate Defects of Speech*, Vol. I and II, C. S. Bluemel. G. E. Steckert & Co., New York.
19. *Stuttering and Lisping*, Edward Wheeler Scripture. The Macmillan Co.
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# BOOK FOUR

## CHAPTER I

## RURAL CLASSES

UPWARDS of one-third the number of all children requiring special educational consideration are to be found in rural ungraded or semi-graded schools in which the establishment of complete or partial auxiliary classes is not practicable. Recently-approved regulations extend auxiliary service in a modified form to these schools. The following general conditions obtain:

1. The teacher is not required to hold an auxiliary class certificate.
2. Eligibility of candidates must be certified to by local or provincial officials connected with the Department of Education and approved by the Inspector of Auxiliary Classes.
3. Modified forms of instruction are given in the regular classroom, no special accommodation being required.
4. Grants to a maximum of ten dollars per unit may be paid Boards as reimbursement for expenditures made during the previous year on special equipment and material. Since no special certification is demanded of the teacher and no special room accommodation required of the Board, no special grants are available toward the teacher's salary or school accommodation.

Four types of rural auxiliary units may be established:

### RURAL ORTHOPEDIC UNIT

Upon application by a Board a rural auxiliary orthopedic unit may be established in case of a child, otherwise eligible to attend public or separate school, who suffers under a physical handicap, as certified to by the Director, Division of Child

Hygiene, or the local School Medical Officer, and approved by the Inspector of Auxiliary Classes, which prevents him from travelling to and from school, but does not seriously interfere with his accommodation and progress in school. Chronic cardiac cases and more or less permanently crippled children who are able to attend to their own wants while at school, and who have an intelligence quotient above 50 and a mental age of at least five years, may be thus provided for. Before the establishment of a rural auxiliary orthopedic unit is given approval, evidence must be shown that satisfactory arrangements have been made by the Board for transporting the pupil in question to and from school.

A reimbursement grant of fifty per cent. of the cost of transportation to a maximum of forty dollars will be paid the Board annually, in addition to general equipment grants to rural auxiliary units. Before a Board shall be considered eligible for such repayment grant or grants, evidence must be adduced that equipment and materials have been purchased, transportation provided, and transportation payments made.

Orthopedic pupils should be seated near the front in a position convenient for ingress and egress, and convenient to the blackboard and to recitation classes. A crippled child may find difficulty in adjusting his body to the ordinary school desk. In such case a chair and table or a satisfactory movable desk may be provided as approved equipment.

The teacher should secure from the family physician or the examining medical officer a report stating to what extent the child may participate in physical training and other school activities. In severe or doubtful cases he may be permitted to take recitation lessons at his seat. On the other hand, the teacher should avoid coddling, as undue attention directed to an infirmity frequently results in the development of psychopathic tendencies injurious to the future welfare of the pupil. In spite of his infirmities he must learn to face the world on a give-and-take basis. On convenient occasions, when the pupil in question is absent from the room, the teacher may direct the sympathy of the class toward their handicapped comrade, and suggest opportunities of helpfulness. Not only will the school life of the child be brightened, but the whole moral tone of the school may be elevated through the development of humane ideals and the exercise of humane courtesies.

The pupil will take lessons with the regular grades, and no special methods of instruction or courses of study below grade eight are advised. The sympathetic teacher will, however, endeavour to discover the child's special abilities and direct their development to a maximum, especially along such lines as may result in the pupil's vocational welfare. For children whose mentality is not distinctly sub-normal, and who are not seriously crippled in their upper limbs, office work or bench work of various types may be suggested as examples of suitable vocations.

With the approval of the local inspector and the Inspector of Auxiliary Classes the Fifth Form, or even to a limited extent, the Fourth Form course may be modified along special commercial or vocational lines. For alert pupils who are sufficiently advanced in English, commercial courses are suggested,—shorthand, typewriting, bookkeeping, business English, arithmetic, and business practice. A second-hand typewriter may be purchased or a machine rented by the month for instructional purposes. To afford reasonable guidance in these subjects it is desirable, but not essential, that the teacher possess a knowledge of typewriting and shorthand. For children who are manually inclined, courses in needlework, leather work, raffia work or reed work may be carried on, less with a view to giving specific trade training than of affording opportunity for the development of craft skill, craft habits, and craft practices. Suggestions concerning the teaching of these various types of handwork are given in the Chapters dealing with that subject in Book II.

## HOME INSTRUCTION UNIT

In school areas of less than 10,000 population, upon application by the Board, an auxiliary home instruction unit may be established in the case of a child, otherwise eligible to attend public or separate school, who suffers under a physical handicap. which prevents him from attending and making progress in school, as certified to by the Director, Division of Child Hygiene or the local School Medical Officer and approved by the Inspector of Auxiliary Classes. Serious cardiac cases, badly crippled children, and protracted convalescents, who have an intelligence quotient above 50 and a mental age of at least five years, may thus be provided for. The Board engages a qualified teacher to give during the school year not less than 100 hours of instruction in not fewer than 50 visits at the child's home.

A reimbursement grant of fifty per cent. of the remuneration given the said teacher by the Board is payable annually in addition to general equipment grants made to rural auxiliary units.

One of the teachers in the local school is usually engaged for this work, and visiting hours are after four or on Saturdays. Arrangements, however, may be made with any qualified teacher to give instruction during hours convenient to both parties. Teachers are advised to consult Chapters II and III, Book III, for suggestions concerning methods.

The regular courses of public and separate school studies are pursued up to Form IV. Should Form V work be undertaken, it is advisable that suggestions concerning vocational guidance and vocational education as outlined in the previous section be followed as far as possible. Much will depend upon the nature of the disability, its probable permanency, family conditions, and even the location of the home. It will probably be advisable in all cases for the teacher to consult with the local inspector and the Inspector of Auxiliary Classes before arranging a vocational programme.

For pupils in junior and intermediate grades, special equipment will be largely in the nature of supplementary reading and assignment work activities, which, it may be noted, is the property of the school and not the individual. The following suggestions are given:

### GRADE I. JUNIOR FIRST

*Peter and Peggy.* Macmillan Co. of Canada, Toronto.

*Preparatory Work Book Accompanying Peter and Peggy.* Macmillan Co. of Canada, Toronto.

*Reading Workbook for Beginners*, Fisher. Dent & Sons, Toronto.

*Number Workbook for Beginners*. Dent & Sons.

*Our Little Reader*. Gage & Co., Toronto.

*My First Primer*. Copp, Clark Co., Ltd., Toronto.

*Gateway Primer*. Macmillan Co. of Canada, Toronto.

*Jingle Reading Book I*. Blackie & Sons, Toronto.

Pegs and Peg Board.

Sewing cards, various designs.

Weaving mats and needles.

½ lb. grey Plasticine.

1 box Phonic Word Builders.

1 box Sentence Word Builders.

1 box Number Builders.

60 Wooden Beads, cubical or spherical, assorted colours.

½ doz. shoe strings.

1 box coloured crayons.

### GRADE II. SENIOR FIRST

*Round the Year*.

*Workbook to Accompany Round the Year*. Macmillan Co. of Canada, Toronto.

*Silent Study Reader*, Book I. Dent & Sons, Toronto.

*Work a Day Doings*. W. J. Gage & Co., Toronto.

*Work a Day Doings on the Farm*. W. J. Gage & Co., Toronto.

*Everyday Canadian First Reader*. Macmillan Co. of Canada, Toronto.

1 box Toy Money.

Plasticine, assorted colours, ¼-lb. lots (See other seat-work activities, Book Two.)

### GRADES III AND IV. JUNIOR AND SENIOR SECOND

*Friendly Stories*. Macmillan Co. of Canada, Ltd.

*Workbook to Accompany Friendly Stories*. Macmillan Co. of Canada, Ltd.

*Silent Study Reader*, Book II. Dent & Sons, Toronto.

*Play Story Geography*. W. J. Gage & Co., Toronto.

*Reading Exercises for Grade Three*. Dent & Sons, Toronto.

*Workbook in English Usage and Composition*, Grade III and IV. Dent & Sons, Toronto.

*New Canadian Arithmetic*, Book I. Dent & Sons, Toronto.

Plasticine, assorted colours.

Sand Tray, 30″x24″.

### GRADE V. JUNIOR THIRD

*Make and Make Believe.* Macmillan Co. of Canada, Ltd.

*Workbook to Accompany Make and Make Believe.* Macmillan Co. of Canada, Ltd.

*Silent Study Reader*, Book III. Dent & Sons, Toronto.

*Nature and Language*, Book I. Dent & Sons, Toronto.

*Workbook in English Usage and Composition*, Grade V. Dent & Sons, Toronto.

*Canadian Neighbours.* Ryerson Press, Toronto.

*Canadian Neighbourhood.* Ryerson Press, Toronto.

*Highroads of History*, Book IV. Thomas Nelson & Sons, Toronto.

*Canadian History Reader*, Book IV. Dent & Sons, Toronto.

*New Canadian Arithmetic*, Book II. Dent & Sons, Toronto.

Plasticine in Assorted Colours.

Sand Tray.

### GRADE VI. SENIOR THIRD

*Silent Study Reader*, Book IV. Dent & Sons, Toronto.

*Nature and Language*, Book II. Dent & Sons, Toronto.

*Workbook in English Usage and Composition*, Grade VI. Dent & Sons, Toronto.

*Canadian Neighbours.* Ryerson Press, Toronto.

*Canadian Neighbourhood.* Ryerson Press, Toronto.

*Highroads of History*, Book V. Thomas Nelson and Sons, Toronto.

*Canadian History Reader*, Book V. Dent & Sons, Toronto.

*Explorers, Soldiers and Statesmen.* Dent & Sons, Toronto.

*Story of the Earth and Its People.* Thomas Nelson & Sons, Toronto.

*Country Life Reader.* Macmillan Co. of Canada, Toronto.

### GRADE VII AND VIII. JUNIOR AND SENIOR FOURTH

*Nature and Language*, Book III. Dent & Sons, Toronto.

*Workbook in English Usage and Composition*, Grades VII and VIII. Dent & Sons, Toronto.

*Canadian Neighbours.* Ryerson Press, Toronto.

*Canadian Neighbourhood.* Ryerson Press, Toronto.

*Highroads of History*, Books VI, VII, VIII. Thomas Nelson & Sons, Toronto.

*Canadian History Reader*, Books VI, VII, VIII. Dent & Sons, Toronto.

*Explorers, Soldiers and Statesmen.* Dent & Sons, Toronto.
*Country Life Reader.* Macmillan Co. of Canada, Toronto.
*New Canadian Arithmetic,* Book III. Dent & Sons, Toronto.

### 3. Sight-Saving Unit

Upon application by a Board a rural auxiliary sight-saving unit may be established in the case of a child, otherwise eligible to attend public or separate school, whose sight prevents him from making satisfactory progress even when he is provided with proper glasses and placed in a front seat, or whose sight would be further impaired by using the ordinary text-books and other means of instruction, as certified to by the Director, Division of Child Hygiene, or the local school Medical Officer, and approved by the Inspector of Auxiliary Classes.

A sight-saving pupil should be furnished with a small table and chair or a movable desk, which may be placed at a convenient distance from the blackboard. He should be seated to the left of the room near the window, where glare reflections from the blackboard will not strike his eyes. Should a movable desk be provided, one which may be tilted and which is furnished with a slight ledge all the way across the front to retain books and other work material, is much to be preferred. Sight-saving pupils are likely to develop hunchback tendencies from bending too closely over their work. While the use of a tilted desk helps to counteract this tendency, the teacher must always exercise vigilance to see that these pupils maintain an upright, square-shoulder posture.

The Auxiliary Classes Branch of the Department of Education is in a position to furnish free of charge magnatype mimeographed copies on sight-saving paper of a special primer, the First and Second Readers and sections of the Ontario Public School Speller for each of the several grades. It is hoped that in the near future magnatype copies of other readers and possibly sets of arithmetic and grammar exercises will be available. The *Red Letter Primer*, Dent & Sons, is suitable for Primary children. In the meantime it is recommended that the following readers obtainable from the Clear Type Publishing Co., 36 Elston Road, Upper Montclair, N.J., be substituted for the readers of grades V to VIII or used for supplementary reading material in grades I to IV.

### GRADE II. SENIOR FIRST

*Elson Reader*, Book I.
*Learn to Study Reader*, Book I.
*Winston Reader*, Book I.

### GRADES III AND IV. JUNIOR AND SENIOR SECOND

*Elson Reader*, Book II.
*Winston Reader*, Book II.
*Learn to Study Reader*, Book II.

### GRADES V AND VI. JUNIOR AND SENIOR THIRD

*Elson Reader*, Book III, Vols. I and II.
*Learn to Study Reader*, Book III, Vols. I and II.

### GRADE VII. JUNIOR FOURTH

*Elson Reader*, Book IV, Vols. I, II and III.
*Learn to Study Reader*, Book IV, Vols. I, II and III.

### GRADE VIII. SENIOR FOURTH

*Learn to Study Reader*, Book V, Vols. I, II, III.
*Selected Verse*, Vols. I and II.
*Everyday Classics*, Vols. I, II, III.

Very little difficulty is experienced in having a pupil carry on with his literature from a distinct reader, and very little extra work is required of the teacher. The fact that he has been provided with special facilities serves as an urge to the pupil. If the teacher, say on Friday afternoons, will afford him opportunity of entertaining the class or school with selections orally read from his reader, it will be found that he will work hard during the week to get his material in shape. The Department will recognize promotions based on proficiency in substituted texts.

Special sight-saving paper, ruled or unruled, should be furnished the pupil on which to do his exercises and written work. This paper can be procured from B. H. and F. M. Brown, 357 College St., Toronto, and the National Stationers, Ltd., 115

York St., Toronto. In senior and intermediate grades the paper can be fashioned into exercise books for each of the pupil's several subjects. Unless checked, short-sighted children tend to write in a small cramped hand both the production and review of which is likely to damage sight. The teacher should see that all written work is done in a large hand, preferably with a soft black primary pencil, and that the pupil sits erect in his seat while writing.

For history and geography the pupil will have to depend largely on the oral work of the class, supplemented by blackboard outlines and accounts written in his own work books. For this reason, it is desirable that he be trained to write his notes neatly and accurately. For map work in geography he may be furnished with large sheets of ordinary unglazed wrapping paper. Maps should be drawn in thick heavy outline with a black primary pencil or crayon. Each map should contain but a limited number of references printed in large hand. Where many references are required, as in the study of Ontario, Canada, North America, or Great Britain, it has been found an excellent plan to draw the outline map on one sheet, pin this and several other sheets together and cut them all to copy. One map may then be used to record each of the several topics discussed. Scrapbook collections of pictures and sand-table representations likewise afford excellent methods of presenting geography and history to visually defective pupils.

In grammar and arithmetic much of the pupil's work should be done on the blackboard. In both subjects it is advisable that he be afforded special opportunity to attain proficiency in the mental solution of problems. The sympathetic teacher will make special occasion to advise the pupil concerning his choice of vocations. In this connection she might read the section dealing with this matter in Chapter IV, Book III.

### 4. Rural Training Unit

Upon application by a Board a rural auxiliary training unit may be established in case of a child who is very backward, psychopathic, or mentally defective, but who can be educated or trained, and whose mental age is not less than the legal school age.

Upon receipt of an application from a Board, the teacher in charge of the pupil in question is furnished with Forms A.C. 3, A.C. 4, A.C. 7. She is requested to fill out the teacher's confidential report on Forms A.C. 3 and A.C. 4, according to instructions given in Form A.C. 7 and, where the services of a school nurse are not available, to fill in the nurse's confidential report to the best of her ability without undue interrogation of pupil or parents. The report of a mental examination administered by the local inspector or an officer from the Department of Education is recorded on Form A.C. 3 and a summary of the results entered on Form A.C. 4. Form A.C. 3 is forwarded the Inspector of Auxiliary Classes for approval. Form A.C. 4 is retained by the teacher for her confidential information.

In rural areas it is of the utmost importance that the establishment of auxiliary training units be conducted with discretion. The expression "subnormal," "mental defective," "direct-learning pupil," or other term which might in any way mark the pupil as a person distinct from other children, must never be used. The explanation for the establishment of a class should be based entirely upon factual data, such as "over age for his grade," "big boy among small children," "is repeating this grade for the third time," "is very backward in his reading," "smarter with his hands than with his tongue or pencil," "giving him special help in his weak subjects," "trying out a new way of teaching with John," etc.

Upon approval being given for the establishment of a rural auxiliary training unit, the pupil is re-classified according to a multigrading scheme somewhat resembling the vertical system of group classification employed in regular training classes. In writing, art, nature study, and hygiene he is graded with pupils of approximately his own age, with the understanding that he exert every effort to maintain his new ranking. Save in case of very backward children, history and geography may usually be taken with the grade immediately below that of his own age group. In these two subjects the teacher must not expect too much from the pupil in the matter of written work. He is frequently able to give a good account of himself in sand-table, plasticine, constructive work, freehand drawings, and other modes of manual expression, and may, through ability in these directions, prove a help rather than a hindrance to the grade in which he is placed.

Arithmetic, reading, spelling, and composition usually present the most serious obstacles to progress. Should the pupil exhibit proficiency in one or more of these departments, he may, when practicable, be classified with his own age grade or with the grade immediately below. Where such classification is not feasible, he should be taken in a class by himself.

A three-fold purpose is served by this multigrading process:

1. Either a junior grade is relieved of the presence of a distractive over-age member, or a senior grade is relieved of a drag upon its progress.

2. The pupil in question is better fitted to the harness at all points, is given opportunity to advance at a maximum rate along lines of greatest proficiency, and also to receive special attention along lines of greatest deficiency.

3. The development of an inferiority complex through continued association with small children in a junior grade or through repeated failure in a senior grade is overcome, and the development of a sense of self-respect through the successful accomplishment of adequately adjusted activities rendered possible. To this latter end, it is advised that the pupil be assigned certain specified duties about the school which have to do, however, with the management of things, and not with the ordering about of other children. Cleaning the blackboard, looking after window-boxes, etc., are suggested. To this same end a certain amount of manual work has been introduced into the programme, in order that the pupil may have opportunity to display as well as to cultivate his ability along this line.

In the five special subjects—arithmetic, reading, spelling, composition, manual training and household science—the courses to be pursued and the methods to be followed will, in general, conform with the outlines given in Book II, which the teacher concerned is requested to read. Various suggestions therein offered may be found to function equally well in case of other backward pupils who approach but do not altogether conform to auxiliary training class requirements.

Forms of manual work should be chosen whose practice will tend least to interrupt the general tenor of the room. For girls, plasticine, paper and cardboard construction, sewing, knitting, simple weaving, and raffia work are suggested; for boys, plasticine, paper and cardboard construction, raffia, reed and twig work are suggested. Unless manual training is carried on as a regular school activity, the special equipment for woodwork is too expensive and its practice too distractive to render feasible the inclusion of this subject on the programme.

Conditions vary largely from school to school. An attempt to lay out a programme for manual work is neither possible nor desirable. The teacher must be largely guided by (1) the ability and age of the pupil, (2) his or her inclinations and preferences, (3) the general school situation in matters of accommodation, size of enrolment, number of classes, etc., and (4) the proficiency of the teacher herself along the several lines suggested. She must likewise remember that, besides inculcation of hand skill and work habits, the purpose of introducing manual training in the course is to provide means of re-establishing the pupil in his own estimation and that of others. Should methods of procedure as outlined in Book II, or as given in the *Manual on Manual Training and Household Science*, not appear adequate for any particular case, the teacher is advised to refer her difficulty to the local inspector or to the Inspector of Auxiliary Classes.

The following equipment is suggested:

*Plasticine*—1 lb. plasticine, assorted colours.

*Paper and Cardboard Construction*—Blunt-nosed scissors; 1 pkg. mounting paper 6″x6″ assorted colours; 1 box crayons; 1 bottle library paste.

*Weaving*—1 oilcloth mat 7″x7″, ½″ slits; 1 pkg. assorted paper mats and fringe 7″x7″; cardboard weaver, home made; Tyndall loom, home-made (see Chapter VIII, Book II.)

*Knitting*—Spool knitter, home-made; rake knitter, home-made (see Chapter VIII, Book II); 1 pair coarse bone needles; heavy fingering wool as needed.

*Sewing*—⅓ yd. Penelope canvas; 1 pkg. wool or raffia needles; 2 yd. checked gingham; sewing cotton, No. 50; thimble, needles, scissors; embroidery needles, and cotton.

*Raffia*—1 pkg. raffia needles; ½ lb. raffia, assorted colours.

*Reedwork*—¼ lb. No. 5; ½ lb. No. 4; ½ lb. No. 3 reed; bases, home-made.

It should be understood that reimbursement grants are only applicable to the purchase of material used during the learning process. The pupil may be allowed to take articles so made home, but, should he desire to make articles for sale or for personal use, the material for these should be furnished or paid for by himself.

Where a pupil is much retarded, considerably over age for grade, and a chronic repeater, it may be advisable to change him to another and unfamiliar reader. Since he is likely to make more rapid progress in active rather than phonic methods of word-recognition, the use of work books which require him to read certain directions to carry on certain activities often prove helpful. The following are suggested for each of the several grades:

### GRADE I. JUNIOR FIRST

*Peter and Peggy.* Macmillan Co., Toronto.

*Preparatory Work Book accompanying Peter and Peggy.* Macmillan Co., Toronto.

*Our Little Reader.* W. J. Gage & Co., Toronto.

*My First Primer.* Copp, Clark Co., Limited, Toronto.

*Gateway Primer.* Macmillan Co. of Canada, Toronto.

*Jingle Reading Book.* Blackie and Sons, Toronto.

*Reading Workbook for Beginners.* Dent & Sons, Toronto.

*Number Workbook for Beginners.* Dent & Sons.

1 box Phonic Word Builders.

1 box Sentence Word Builders.

### GRADE II. SENIOR FIRST

*Round the Year.* Macmillan Co. of Canada, Ltd.

*Workbook to Accompany Round the Year.* Macmillan Co. of Canada, Ltd.

*Silent Study Reader*, Book I. Dent & Sons, Toronto.

*Work a Day Doings on the Farm.* W. J. Gage & Co., Toronto.

*Work a Day Doings.* W. J. Gage & Co., Toronto.

*Everyday Canadian First Reader.* Macmillan Co. of Canada, Ltd.

### GRADES III AND IV. JUNIOR AND SENIOR SECOND

*Friendly Stories.* Macmillan Co. of Canada, Ltd., Toronto.

*Workbook to Accompany Friendly Stories.* Macmillan Co. of Canada, Ltd., Toronto.

*Silent Study Reader*, Book II. Dent & Sons, Toronto.

*Reading Exercises for Grade III.* Dent & Sons, Toronto.

*Play Story Geography.* W. J. Gage & Co., Toronto.

*New Canadian Arithmetic, Book I.* Dent & Sons.

### GRADE V. JUNIOR THIRD

*Make and Make Believe.* Macmillan Co. of Canada, Ltd., Toronto.

*Work Book to Accompany Make and Make Believe.* Macmillan Co., of Canada, Ltd., Toronto.

*Silent Study Reader*, Book III. J. M. Dent & Sons, Toronto.

*Nature and Language*, Book I. J. M. Dent & Sons, Toronto.

*Canadian History Reader*, Book IV. J. M. Dent & Sons, Toronto.

*Canadian Neighbours.* Ryerson Press, Toronto.

*Canadian Neighbourhood.* Ryerson Press, Toronto.

*New Canadian Arithmetic, Book II.* Dent & Sons.

### GRADE VI. SENIOR THIRD

*Silent Study Reader*, Book IV. J. M. Dent & Sons, Toronto.

*Nature and Language*, Book II. J. M. Dent & Sons, Toronto.

*Canadian Neighbours.* Ryerson Press, Toronto.

*Canadian Neighbourhood.* Ryerson Press, Toronto.

*Canadian History Reader*, Book V. J. M. Dent & Sons, Toronto.

*Highroads of History*, Book V. Thomas Nelson & Sons, Toronto.

*Explorers, Soldiers and Statesmen.* J. M. Dent & Sons. Toronto.

*Country Life Reader.* Macmillan Co. of Canada, Ltd., Toronto.

*New Canadian Arithmetic, Book II.* Dent & Sons.

Few pupils will be found capable of doing work in Grades VII and VIII (Junior and Senior Fourth), and these can be accommodated from the school library. The teacher may read the section on Seat-Work in Book II for other useful devices in the teaching of reading, specially to primary pupils.

The sequence in the arithmetic course is outlined in Book II, and the methods given for teaching the same should be closely followed. Direct-learning pupils frequently fall behind in this subject owing to their inability to interpret word situations and think according to word formulae and type solutions. The teacher should bear in mind that pupils of this type will rarely if ever write on the Entrance Examination, and so stress the mathematical rather than the composition aspect of arithmetic. She should endeavour to present problems in such a specific or objective fashion that the pupil will be able to picture the transaction, and so avoid not only fixed formulae and solutions, but likewise fixed methods. For instance, the boy who finds the cost of 6 lb. of butter at 32 cents by adding six 32's is to be commended. Later he may be shown how to abridge the process, but must never be given the idea that a process which leads to a correct solution is wrong. Suggestions regarding the preparation of seat-work in arithmetic are to be found in Book II.

The organization of rural auxiliary units being a more or less unique educational experiment and largely confined in practice to the Province of Ontario, the inclusion in this chapter of several case studies might have interest and significance for the teacher reader.

*Case Study Number One, A. G.*

Attention was drawn to the case of A. G. through a letter from the local attendance officer, which read in part: ". . . a boy thirteen years of age enrolled in one of our rural schools. During several years of attendance he has not progressed beyond the primary class . . . father states he is just as bright about the farm as the other children. . . . It is obvious that this boy is getting little benefit from school attendance. . . . I have been asked for a home permit for all this term."

The local public school inspector was requested to report on the case and to administer an auxiliary class examination.

On Form A. C. 3 (see page 23) dated October 5, 1931, the teacher reported: C.A. 13 years 8 months; Estimated M.A., 7 years 9 months; Estimated I.Q., 57; Age on first entering school, 7 years 3 months; Present placement Grade I; Grades repeated, primer six times; Retardation, 7 years 4 months; Tendencies, restless, good-natured, plays with juniors; Alertness, slow; Dexterity, handy; Achievement profile—reading, Grade I; writing, Grade 3; arithmetic, Grade I; spelling, Grade I; drawing, Grade I.

The examination record forwarded by the inspector gave: C.A., 13 years 8 months; M.A., 8 years 0 months; I.Q., 60. His supplementary report read: "The family moved to S.S. No. — last April. The boy attended 13 days in April, 2 in May. . . . This boy was the fifth child. . . . His mother died when he was a few days old. The step-mother seems greatly interested in him and says that he has always been very regular at school."

On November 16 the inspector of auxiliary classes, in company with the local inspector, visited the school, which had an attendance of thirty-six. The teacher, a capable girl, confirmed her report and stated that A. G. was a troublesome pupil in school and a frequent truant.

A visit at the house revealed an effectively run farm and a well conducted home. A. G. proved to be a sturdy lad with a wholesome grin on his freckled face. He could recognize with any certainty only some forty-two words in the primer, was unable to summate three plus four without counting and expressed a strong aversion to school. When asked the reason he replied: "I am fed up with The Little Red Hen (the first lesson in the primer). The boys call me a nut. I won't take that from anyone. . . . It isn't fair to expect a fellow to lick a whole school every day." The parents expressed willingness to have A. return to school and undertake special work. The step-mother was most anxious on his behalf.

The local inspector discussed the matter with the trustee board, who made application on November 25 for the establishment of a rural training unit.

On December 7, the following suggestions were submitted to the consideration of the local inspector, the teacher and the trustee board:

"(1) *Special Equipment*—

Round the Year Reader.

Workbook accompanying Round the Year Reader—*Macmillan Co.*

New Canadian Arithmetic, Book I—*Dent & Sons.*
Everyday Words, Books I and II—*Clarke Irwin & Co.*
1 Box Toy Money.
1 Box Phonic Word Builders.
1 Box Sentence Word Builders.

(2) *Special Material*—

1 lb. each No. 5, No. 4, No. 3 and ½ lb. flat reed.

Bases for baskets may be bored and otherwise prepared at home.

(3) *Special Methods*—

In academic work it is advisable that his classes in reading, arithmetic, and spelling be taken separately. Classes in writing, hygiene, art, physical training, and music may be taken with pupils of approximately the same age as himself. He might listen in on history, nature study, and geography lessons with Grade 5, provided that no written work but only construction work, such as plasticine, sand-table, and scrap-book illustrations, be required of him in these subjects. In learning to read it is advisable that he be taught largely by the work-book method. The New Canadian Arithmetic, Book I, may be used as a text in reading as well as in arithmetic.

Owing to the fact that his parents sell plants and flowers on the —— market, it is suggested that the boy be trained to make basketry holders for flowerpots and cut flowers.

The Board is eligible for a reimbursement grant not exceeding ten dollars toward the purchase of special approved equipment and material."

On April 26, 1932, the following report was received from the local inspector: "I found the county's first special class in full swing. Really the experiment has worked well. Except for time out of school with a broken limb the boy has not missed a day since the first of January, and is keenly interested in his work.

"He is half-way through the Work-Play Book, with exercises all completed, and his reading is much improved as well as his number work. He has something substantial to show in the manual way. He has made four small baskets six inches high, two much larger ones, and two mats, with another large basket half finished and going strong.

"Far more important than any of these accomplishments is the fact that A. is now on the level socially with the seniors in the school. He has won their respect and is now 'one of the boys' both inside the school and on the playground. Previously, you know, he had been willing to play only with the younger boys of the primer class. I might add that at recess this afternoon I found one of the senior boys bringing a kettle of water into the school-room and putting A.'s reeds to soak. A. is now fourteen and my only fear is that his father may want to keep him out of school next term. Altogether this special effort on behalf of the boy has been mighty well worth while."

On September 16, 1932, the assistant inspector of auxiliary classes visited the school. Extracts from her report read:

"A. is attending school regularly. He is getting along well with other children and making a real effort in his lessons. He can read Round the Year and Grade 2 Readers, adds well, and can subtract where no borrowing is involved."

In November, 1932, a reimbursement grant of $6.82 in full repayment on expenditures made for special equipment and materials was paid the Board.

*Case Study Number Two, X. Y.*

Attention was drawn to the case of X. Y. through a letter to the Department of Education from the father of the child, dated November 20, 1931:

"We have a little girl, eight years old, who has very poor eyesight. We took her to a specialist when she was four years old and she has been wearing glasses ever since. A year ago last September we started her to school, but had to take her out. She could not see the work on the board and the strain was undermining her health. The specialist whom we consulted advised us to keep her home and teach her. I would like information about books with large print."

The local inspector upon advisement discussed the matter with the trustee board, who later made application for the establishment of a rural sight-saving unit in case of the child. The report of the Director of Child Hygiene, Department of Health, read as follows:

"This child has been wearing glasses since she was four years of age. She last consulted Dr. B., of W., in October, 1930. The child appears to be thin and of a nervous temperament. The vision fractions are as follows:

Without glasses, Left $\frac{8}{100}$; right $\frac{4}{100}$.
With glasses, Left $\frac{8}{100}$; right $\frac{8}{100}$.

"It is evident in this case the child is in need of special attention."

The following suggestions were furnished the inspector, teacher and trustee board:

"The pupil should be furnished with a small table and chair or a movable desk which may be tilted and which is provided with a slight ledge all the way across the front. She should be seated to the left front of the room (the building had modern lighting according to the application) near the window and convenient to the blackboard where glare reflections will not strike her eyes. Her seat may be shifted from time to time according to assignments on the blackboard and changes in lighting during the day. You will need a supply of special sight-saving paper for all written exercises. A large size, soft, black, primary lead-pencil should be used for writing and drawing. The pupil should be trained to do many of her writing and arithmetic exercises in large hand on the blackboard.

"There is being forwarded the teacher a specially prepared magnatyped copy of an introductory primer together with a master copy of the same. Following suggestions and samples given in the master copy the child will illustrate her copy with picture cut-outs. The pupil should likewise be supplied with one pound of plasticine in assorted colours."

The class was established February, 1932. Extracts from the report of the inspector of auxiliary classes, September, 1932, read:

"Special seating facilities have been provided and the child is able to move from place to place according to the location of assignment work on the blackboard. The room is well lighted and the pupil has no difficulty in following blackboard exercises. Much of her number work is done at the blackboard. She has completed the special magnatyped primer, which she reads with facility. It is advised that the Winston Reader, Primer and the Winston Reader, Book I, be purchased by the Board for her use. Owing to her age and intelligence the child may possibly be promoted to Grade 3 before next June. A magnatyped copy of Grade 3 Speller and Reader will be forwarded early in 1933.

In November, 1932, a reimbursement grant of ten dollars in repayment for expenditures on seating facilities and large type readers was paid the Board.

*Case Study Number Three, A. M.*

Attention was drawn to the case of A. M. by a letter of inquiry from the local inspector: ". . . girl nine years of age . . . has attended school two years . . . has to be driven to and from school . . . lifted from her seat in school to a wheel-chair or carried by the teacher . . . suffers also from a speech defect, but has satisfactorily completed Grade 3. . . . The Board feel their present teacher is unable to attend to this girl at the school." On September 8, 1931, application for the establishment of a Home Instruction Unit was received from the Board.

The report of the Director of Child Hygiene on the case reads: "Father a farmer. Home conditions fair. Mother appears capable of helping child and is very co-operative. Child lives one mile from school. . . . Spastic paralysis (instrumental delivery); the paralysis involves right arm and both legs, necessitating her being carried everywhere. If helped up she can stand for a few minutes alone. The child appears to be above the average intelligence for this type. She has had a maximum of treatment at the Hospital for Sick Children and is still under supervision. . . . The child is fully entitled to extramural teaching."

The local teacher was engaged by the Board to visit A. twice a week after four or on Saturdays, and to pursue the regular Public School Course of Study.

The report of the assistant inspector of auxiliary classes on her visit of September 15, 1932, reads: "Child has been promoted to Grade 5 . . . reads fairly fluently and enjoys poetry. She is not retarded in the essentials of her academic work in spite of her severe handicap. Speech and writing show improvement. Suggestions: (1) The child's school material should be kept in a definite spot in an orderly manner so she may feel she has a place of her own. (2) Encourage the mother and children to wait and let A. answer for herself. (3) Substitute exercise paper for work-books. Fasten paper to a drawing-board with thumb tacks and the board to the table with clamps. Arrange exercises in order. (4) Let child cut out pictures on drawing-board with razor blade put in a proper handle. (5) Checkers, dominoes, etc., should form part of her work, . . . games in which she has to think and to move something with her hands. (6) Teach the use of the Rake Knitter and Tyndall Loom, instructions for which are enclosed. (7) Never let purely academic work extend over an hour. (8) Base history, geography and nature study on story reading, collections, scrap-book making, etc."